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ABSTRACT

This laboratory manual is designed to prepare postsecondary students for working with children in a child care setting. The experiences in each unit are intended to enhance students' knowledge of and skills in working with children. The workbook is organized in six units covering the following topics: perspectives on child development; theories of child development; prenatal development and the neonate; development in infancy and toddlerhood; development in early childhood; and middle childhood and adolescent development. Each unit includes performance objectives, an overview, references for further information, laboratory experiences, a self-evaluation form, and a participation evaluation form. Guidelines for a successful laboratory experience are provided. The manual also contains a glossary and a 20-item bibliography. (KC)

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Principles and Theories of Child Development

Student Laboratory Manual

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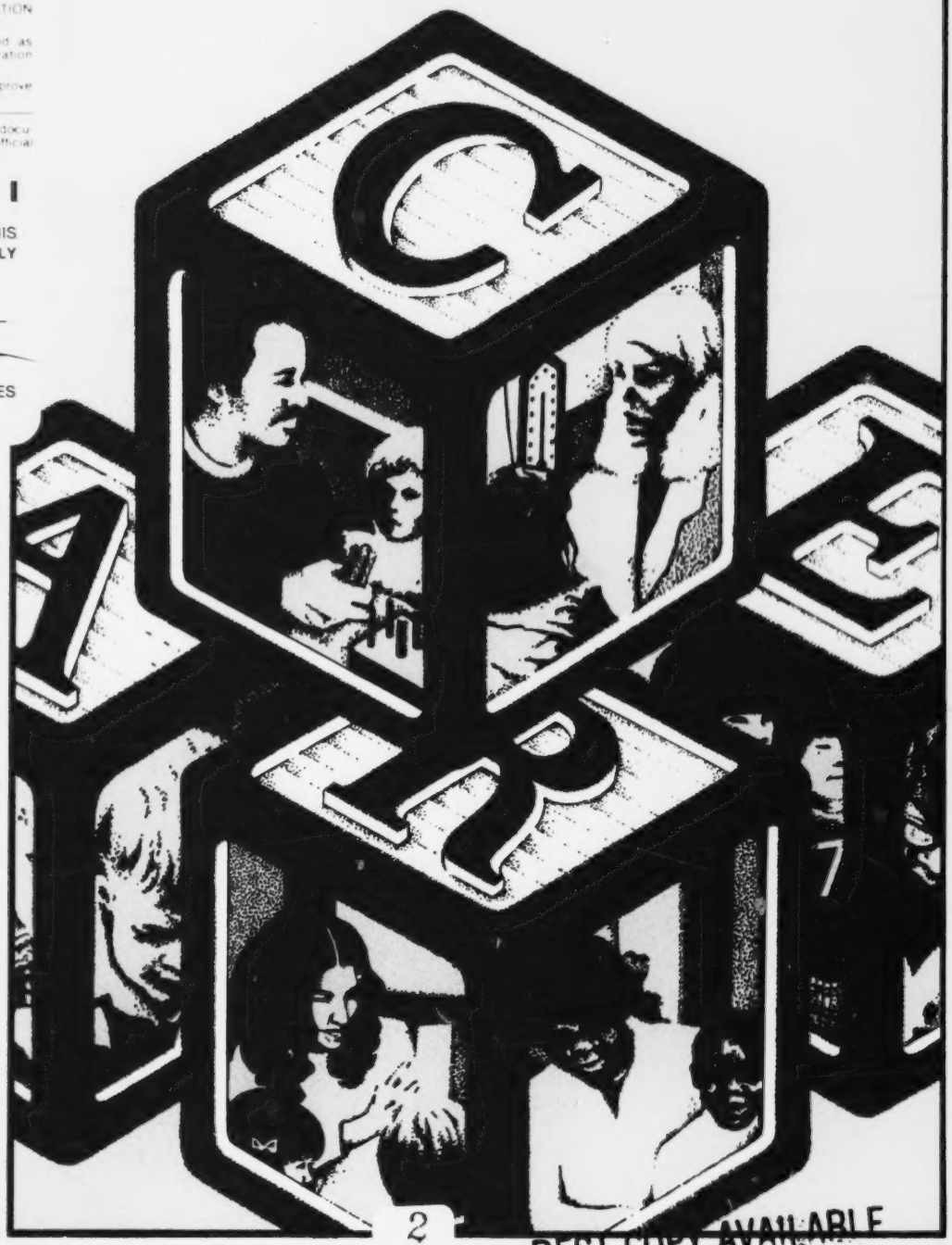

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Division of Post-Secondary Programs
Department of Occupational Education and Technology
Texas Education Agency
Austin, Texas

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Principles and Theories of Child Development

Student
Laboratory
Manual

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Introduction

People who care for or work with children are better equipped when they understand the basic principles and theories of child development. Competent caregivers* understand the different needs, abilities, and limitations of children at different developmental levels. This knowledge helps caregivers work more effectively with children of all ages.

Principles and Theories of Child Development is designed to prepare you for working with children in a child care setting. The experiences in each unit are intended to enhance your knowledge of and skills in working with children. The laboratory (lab) experiences require you to observe and participate in the care and education of young children.

The manual is divided into six units plus a glossary and a bibliography. Each unit includes: Performance Objectives, An Overview, and Lab Experiences. The first page of the unit lists the performance objectives. The objectives list what you should be able to do after you finish the unit. The unit overview gives information on the unit topic. At the end of the overview several books are listed. Read these references for more information. The lab experiences provide opportunities for you to observe and participate in activities related to the unit topic in a child care setting. Observation experiences require you to observe young children and their caregivers. Participation experiences require you to plan activities and work directly with the children. Each unit includes self-evaluation forms as well as forms for instructor evaluation.

Principles and Theories of Child Development is a workbook. Write your descriptions of the lab experiences in the manual. These lab experience reports may be turned in to your instructor for evaluation and feedback. This manual will assist you in gaining knowledge, skills, and positive attitudes about young children in group care settings. The classroom learning experiences provided by your instructor and your reading assignments will also help you become a competent caregiver of young children.

*The term *child caregiver* as used in this manual refers to any individual who has responsibility for the direct care of children. This includes parents, early childhood educators, personnel in child care settings, siblings, grandparents, etc.

Guidelines for a Successful Lab Experience

You and your instructor will work together to decide which laboratory (lab) experiences you will do in each unit. Labs may be modified to meet the needs of your individual situation. Some courses may allow enough time for you to complete most of the lab experiences. Whichever activities you do, the following guidelines will help you have successful lab experiences.

1. Before beginning to work in the lab, obtain a copy of your state's licensing standards for child care centers. Familiarize yourself with the guidelines regarding the guidance or discipline of young children. Observe these guidelines carefully as you work with young children.

2. *Always read the unit overview and assigned readings.* You will need an understanding of the topic before you begin your observation and participation experiences.

3. *Notice the learning objective of each lab experience before beginning the experience.* The learning objective tells you the purpose of the lab experience. Reaching this learning objective will help you achieve one of the performance objectives at the beginning of the unit.

4. *Read and follow the directions for each lab experience carefully.* When you have completed the experience, answer the key questions for the lab experience.

5. *Plan ahead.* Work with your course instructor to plan which lab experiences you will complete and where they will be carried out. Work also with the caregiver of the children with whom you will be carrying out your lab assignment. Together, plan the date, time, and group of children with whom you will work. Get both your instructor's and the caregiver's approval for the lab experience you are planning. Be sure that both your instructor and the children's caregiver know what you will be doing each time you visit.

6. *Be reliable.* If you are scheduled to be at the child care center to conduct an experience with the children, be sure to arrive on time and follow through with your plans. Most

experiences will take 30 to 60 minutes depending on whether you are participating or observing.

7. *If you are already employed at a child care center, work with both your instructor and your center director to schedule your lab experiences.* You may be able to complete some of the experiences with your own group of children. If you need to visit other rooms in your center or another center, you will want to check this out with your instructor and the director.

Performance Objectives

Perspectives on Child Development
Unit I

Studying Development

- Define development.

Principles of Development

- Explain the concept of developmental sequence.
- Describe the general patterns of development.
- Examine the reciprocal nature of the aspects of development: physical, emotional, social, and intellectual.

Child Observation Principles

- Explain the importance of understanding individual differences when observing developmental changes.
- Prepare a set of guidelines for observing children.

Development Issues

- Differentiate between quantitative and qualitative changes in development.
- Analyze the nature/nurture issue.
- Identify some of the internal and external influences on child development.
- Describe how human nature and development can be viewed.
- Analyze the relationship between theory and observations of behavior in children.

An Overview

This unit will help students understand how children grow and develop. Development will be defined, and the areas of development will be discussed. Basic principles of development will be presented, and developmental issues will be reviewed. Different methods of gathering information about children will be presented, and the importance of understanding how this information is interpreted and then used will be discussed.

Studying Development

Development is systematic, or orderly, change over time. Child developmental professionals study systematic changes in the ways children grow, feel, think, and relate to others. They may be most interested in one topic area (such as language or motor development), or they may study a certain age range (like infancy or middle childhood). Developmentalists with a life-span approach study the ways in which humans change from conception to death.

Children change in many areas and in many ways. People who study development want to know what these changes are and how they happen. Some of the questions they ask are:

- How are individual children different from one another?
  (Do girls know more words than boys in kindergarten?)
- How are individual children similar to each other?
  (What skills do all normal newborns have in common?)
- How does one child change over time?
  (Is Becky as active at four as she was at two?)
- How do children differ *in the ways they change*?
  (Do children who eat a well-balanced diet reach puberty sooner than children who have poor diets?)

Many adults are interested in short-term changes in a child, such as a broken leg or a poor grade on a spelling test. But scientists and educators who study child development often want to find out about more long-term changes such as learning to share or maturation of the muscles. These people are often more interested in the process of change rather than the product of change. *How* do children learn to share, and *how* do muscles mature? These are the kinds of questions asked in the study of child development.

All people who are around children study them in some way by gathering information about them. We observe children by watching and listening to them. Those observations give us information that we interpret and then act upon.

We can interpret a piece of information in many ways. For example, when a child is observed crying, it could mean that the child is physically hurt. But it could also mean that the child is scared, embarrassed, or seeking attention. How we decide to treat the crying child depends on what we interpret the crying to mean. In order to appropriately evaluate, or judge, how we "act" toward children, we need to be aware of how we gather and interpret information about them.

Scientists who study child development use formal methods to gather and intepret information about children. They focus on developmental principles and theories to help them understand children. Those who take care of children, such as teachers, parents, and other *caregivers* may also do this. People who apply developmental principles and theories to their work with children believe that they can help children as individuals by learning about children in general. They assume they can guide children through changes to help them reach their full physical, emotional, social, and intellectual potentials.

Principles of Development

The general principles which govern development always apply to physical growth, but some also apply to the other areas of development. We need to be aware of these principles so we can know what to expect from children. When we expect too much or too little of children, it causes problems for them and us. Realistic expectations help us to provide better guidance for children.

Developmental Sequence

Because many of the changes in childhood are related to physical maturation, we often expect certain changes to occur at certain ages. However, the relationship between age and developmental change is not exact. For instance, toilet training is physically impossible until the sphincter muscles are mature enough. This often occurs toward the end of the second year, but it may happen several months earlier or later.

The average age at which certain changes occur is not nearly as important as the *sequence* of those changes. Knowing that walking comes after creeping is as important as knowing the approximate age range when walking should begin. Age becomes important only when there are severe delays in development.

Sensitive Periods

To study child development, we need to know how the sequences of normal development can be interrupted. An important

concept is *sensitive periods*, times when the child's development is sensitive to certain outside influences. This often occurs in an area of development at a time when there are very rapid changes occurring in that area. For example, during the third through the sixth weeks of the development of an embryo, the central nervous system is developing rapidly. When the mother is exposed at this time to certain influences, such as viruses or drugs, there may be severe damage to the central nervous system of the infant.

The normal sequence of development may also be interrupted when the child does *not* have certain influences during sensitive periods. For instance, all normal babies coo and babble, even if no one talks to them. However, they have trouble going any further than babbling if they do not begin to hear spoken language at that time.

The idea of sensitive periods means that the person is, at certain times, more sensitive to the effects of certain outside influences. Sometimes these effects are permanent, sometimes they can be changed only with difficulty, and sometimes the effects are easily changed.

General Patterns of Development

Knowing what to expect from a child involves more than being aware of the sequences of change. Knowing the general patterns of change can also help caregivers to understand a child's development.

Order of Development. Development is not random. The changes are orderly. The order in which physical changes happen holds true for skeletal growth of embryos, for maturation of the muscles of infants, or for motor coordination of toddlers. Physical development follows two major rules:

- Head-to-toe (*cephalocaudal*) development
- Near-to-far (*proximodistal*) development

The principle of head-to-toe development states that the upper parts of the body mature faster than the lower parts. For example, healthy infants gain control over their neck muscles before their leg muscles. The near-to-far principle states that the central parts of the body develop before the outer parts. In an embryo, the trunk and internal organs appear first, followed by the arms, hands, then fingers. After birth, the infant gains motor control over these parts in the same order.

Epigenetic Principle. The *epigenetic principle* gives us a reason to think of development in terms of stages. That is, that children operate at one stage of ability for a while, then later they move on to another level of ability. This principle states that growth is based on what is already there. New parts emerge out of the old ones by a predetermined plan. For instance, there is a "biological clock" that tells the body when to begin the changes

that are related to puberty. The adolescent's body emerges from that of a child, but it is also very different from a child's body. It has a different structure (secondary sex characteristics like breasts), and it has some different functions (it is now able to reproduce). Though each stage is built on the one before it, the new stage is different.

Simple-to-Complex Development. Development also follows a pattern that moves from the simple to the complex. The first coos of a baby are very simple sounds. These are followed by the more complex sounds of babbling, then single words, and later, sentences which become more and more complex.

General-to-Specific Development. Development proceeds from the general to the specific. Young infants will make global, general arm movements toward an object. Older infants will be able to make more complex movements which involve specific motions of the arms, wrists, hands, and fingers.

A related principle states that control over these different parts of the body must develop separately (*differentiation*). Only *after* this can they be combined together (*integration*). At first, babies only swat at an object with their entire arms. This global movement stops as specific muscles come under control and reaching skills are separated from grasping skills. Finally, these skills come together. The control and coordination of the arms, wrists, hands, and fingers allow the object to be grabbed.

This process of separation and coming together (differentiation and integration) is part of Heinz Werner's *orthogenetic* principle. This pattern of development can be seen in areas other than physical growth. For instance, children must recognize the separate letters of the alphabet before they can recognize the combinations of letters that form words.

Relationship Between Aspects of Development

All aspects of development—physical, emotional, intellectual, and social—are connected. These processes of growing, feeling, thinking, and interacting with people are all related to each other in a *reciprocal*, or give and take, way. For instance, physical maturation both affects and is affected by changes in emotions. Social development is influenced by and influences intellectual development. All aspects of development interact with the others.

We often discuss the major developmental areas separately, but they can never really be separated. It is vital to think in terms of how one aspect of development affects and is affected by others. For instance, learning depends on brain maturation, which depends in part on good nutrition. Whether or not a family can get proper foods depends on many economic and political factors. The willingness of a child to eat the proper foods depends on many emotional, social, and physical factors.

Thus the *focus* of attention may be on one area, but the influences of the other areas must also be considered.

Child Observation Principles

We can trace physical, emotional, social, and intellectual development by observing child behavior. A sensitive caregiver, whether a parent, relative, teacher, or other professional child caregiver, has good observation skills. Observation means much more than simply watching children to make sure they are safe.

Types of Observation

There are two types of observations. A *subjective observation* is a statement about the motives of a child. It is based on what the observer *thinks*. An *objective observation* is based only on the child's actual *observed* behavior. The following are based on one observation:

Observation 1. Dee was mad this morning.

Observation 2. After her mother left, Dee pushed her doll away and said loudly, "No!"

Observation 1 is subjective since it is based on what the observer *thought* about the child's behavior. It gives no information about what the child actually did and said. Observation 2 is an objective record of the actual *behaviors* seen and heard.

Collecting Adequate Data. Objective observations need to be made so that if two people observe the same behaviors, they will report the same things. This helps to ensure that the information is *reliable*.

However, even if they report the same things, different observers might draw different conclusions about what the behaviors mean. For instance, one observer might conclude that Dee was indeed mad. Another might think that she was ill, while another might interpret her behavior to mean that she was scared when her mother left. A qualified observer knows when there is not enough objective information to make a correct, or *valid*, interpretation. More evidence is gathered before making a final decision about what the behaviors mean. When evaluating a child's developmental level in any area, it is crucial to have enough objective information.

While all children are similar, they are individuals as well, and they show individual differences in all aspects of development. We should not think children are motor delayed just because they do not walk independently at 13 months or are not toilet trained at 2 years. In physical maturation, there is a wide range of what is normal. Other factors may enter in, too. For instance, a child may be fearful of walking alone due to having a bad fall. Or, when the child's caregiver fails to notice the child's indications of need to go to the bathroom, the child may be labeled "delayed" in toilet training.

So, as observers, we collect *data*, or objective information, about a child from several sources and at different times before drawing important conclusions. Only careful observations will uncover reasons for more extreme individual differences. Sometimes a specially trained professional needs to observe and interpret the behaviors.

Recording Behavior

When observing children's behavior, we sometimes need to record it. Some recording methods include:

- *Running Record*
- *Anecdotal Record*
- *Time Sampling*
- *Event Sampling*
- *Developmental Check List*

Running Record. Because one event or action often leads to another, the running record is a good way to record observations of one child or a very small group of children. A running record is a continuous record of behavior during an extended time period. For example, the interactions of two children might be observed during free play. Everything the children did and said during this time would be recorded.

Anecdotal Record. The anecdotal record involves recording an event that has taken place. A single event or episode in the day of the child is recorded. For instance, an observer might record the reaction of a child to a new experience.

Time Sampling. Time sampling involves recording the behavior at certain intervals of time. The observer needs to know in advance what categories of behavior will be observed. An observer looking at emotional expressions might use a chart that lists categories like smiling, frowning, scowling, etc. A time period is designated for sampling. For instance, if the time period chosen is 60 seconds, the observer looks up every 60 seconds and records the child's expression by checking one of the categories listed.

Event Sampling. Recording how often a specific behavior occurs during a certain time period is called event sampling. The observer must know ahead of time which behaviors will be observed. Then, within the time span chosen, the observer tallies the number of times the behavior occurs. For example, a child is observed at play for fifteen minutes. Each time the child helps someone else during that time, a tally is placed by the category of "helping."

Developmental Check List. Finally, a developmental check list provides columns for checking whether a child ever shows a certain behavior or not. The list of skills or behaviors to observe

may focus on one or more aspects of development, such as language or motor development. These check lists usually present skills in the order they develop. They may also give approximate ages when behaviors are expected to appear.

Ethical Considerations

When observations are recorded, they have the potential to be interpreted and misinterpreted. So, observations should be considered privileged information. Observers should not discuss information about a child without permission from parents and others involved. Observations and interpretations should never be discussed in front of the child, other children, or other adults. Observation records should be safely stored where they cannot be seen by others.

Of course, it is acceptable to share concerns with a director or supervisor about the progress of a child. Students taking a lab course must also be able to discuss their observations with the course instructor and the lab instructor. Permission for sharing this information is usually obtained before the class starts. Finally, all adults are bound by law to report any suspected case of child abuse or neglect to the proper state authorities, even if they have not actually observed the abuse or neglect taking place.

Developmental Issues

Most of the issues in the study of development have to do with how observations of human behavior are interpreted. The major issues involve the types of developmental changes people think are important, their beliefs about how children are affected by experiences and heredity, and the general ways in which people view human nature.

Quantitative and Qualitative Changes. Two types of change are used to explain development. *Quantitative development* refers to change which can be measured by using the same standard of measurement each time. For instance, weight gain is a quantitative change since it can always be measured with pounds and ounces, whether the child is a newborn or an adolescent. Change is seen as simply adding more of the same to something that already exists. For example, some people explain the development of language as simply learning more words and more rules of grammar.

Qualitative development occurs when something new emerges that is so different it cannot be measured with standards used before. It is not just "more" of the same thing. Walking is not simply more or better creeping. The use of words to identify objects is not just more or better babbling of sounds. Instead, these are believed to be qualitative changes. The very essence, or quality, of the behaviors has changed. Physical development also involves qualitative change. For instance, in

the earlier discussion of the epigenetic principle, qualitative changes in the adolescent body were described.

The kinds of things people choose to study depends on which type of change they think best explains development. People who believe quantitative changes best explain development look for continuous, steady changes. People who believe qualitative changes are more important will look for levels, or stages of development.

Nature and Nurture

The *nature/nurture issue* has to do with whether heredity is more important than experience in explaining development. For instance, is intelligence inherited, or is it based on experiences with the environment? Is change rooted in biology or experiences, in the person or in the environment?

Internal Influences. There are many internal, or nature, influences on development. Some of these include heredity, maturation, and physical state. *Heredity* is the passing down of biological traits, through genes, from parents. These genetic traits are internal influences because environment does not cause them. For instance, experience has no effect on eye color.

Maturation is the process of becoming fully functioning. The body is programmed by the genes to change in certain ways at certain times. So, adolescent girls do not have to practice growing breasts–it happens automatically, under normal conditions. One's present physical *state*, or condition, affects behavior and ability. For instance, some people have daily physical cycles which make them more alert in the morning, while others function better at night.

Sometimes internal influences can be changed by external factors. A child's intellectual potential may be inherited, but reaching it depends a great deal on experiences. A muscle that is not used cannot mature properly. When a frightened child does not sleep, the physical state will be affected.

External Influences. External, or nurture, influences are those found in the environment rather than within the person. Some common external factors affecting development are socioeconomic status, family patterns of interaction, diet, culture, education, etc. External influences often have strong effects on internal functions. For example, a child who does not eat a good breakfast has a hard time learning during the morning hours, regardless of intellectual level. Internal factors may also affect external factors. For instance, one's race may affect educational opportunities or socioeconomic status when there is racial discrimination.

According to many developmentalists, it is useless to argue whether nature or nurture is the most important factor in development. It is not even a matter of each contributing 50

percent to development. Both are 100 percent important in explaining development. The most useful explanations involve *how* these two factors come together to produce orderly change in human beings.

World Views

The nature/nurture issue is related to the issue of *world views*. The way people view the world or human nature also affects the way they will interpret a child's behavior. Some believe human beings are passive from birth, like blank slates waiting to be written on by experiences. These people study child development by looking for quantitative changes. They believe that the source of important developmental change comes from the environment. This is the *mechanistic world view*.

Others believe that from birth, humans actively seek experiences in the environment. These people study child development by looking for qualitative changes. They believe that the child and the environment interact, but that the important source of change comes from within the child. This is the *organismic world view*.

Finally, other people who study development believe that there is a reciprocal interaction between children and their environments—that each affects and is affected by the other. The child and the environment cannot be separated because they are seen as part of one system. The child and the environment are in constant mutual change. The child shapes and is shaped by the environment. The environment shapes and is shaped by the child. The source of developmental change is not in the child or the environment. The source of change is in the interactions between them. This is called the *dynamic interaction world view*.

Some people believe these dynamic interaction ideas are a part of the organismic world view, and that it is not necessary to talk about a third world view. Whether that is the case or not, there is a trend toward accepting the world view that gives the environment and the child equal credit for developmental changes. This balanced view guides the explanations of behavior in this book.

These issues of quantitative/qualitative change, nature/nurture influences, and world views are important in understanding children. Theories of development are shaped by the theorist's beliefs about these issues.

Functions of Theory

Describing and explaining are major functions of theory. Theories of development try to describe and explain human growth and changes in behavior. A *theory* is a way of looking at information so that it makes sense. Without theories, all the "facts" in the world would be meaningless. Theories organ-

ize information so that it has meaning.

Theories may be very *informal*, based on nothing more than what parents teach their children about human nature. (For example, "Children are born selfish" is an informal theory.) The theories we use make us think a child's behavior means certain things. These beliefs then cause us to act in certain ways toward that child. For example, if we believe children are born "selfish," we might interpret the cries of an infant as behavior needing to be punished or ignored. But if we believe children are born "unselfish," we would be more likely to think that the cries mean the infant needs help.

Theories not only give meaning to the behaviors we observe, they also tell us which behaviors to observe. People cannot pay attention to all the information in the environment. Theories predict what things we are likely to find, so we often do not look for things our theory considers unimportant. In the earlier example about selfishness or unselfishness in infants, we would not even wonder whether the infant was intellectually capable of "intending" to cry in order to get something if we believe children are born unselfish.

Formal scientific theories follow the same principles as informal theories. Formal theories are just more organized and specific about what information is expected, or predicted. Scientific research is nothing more than an organized effort to explain what we observe. Science focuses on theories because they make sense of information. Developmental theories organize and make sense of information about how people behave and change. Theories tell us how to interpret a child's behavior, and those conclusions affect how we act toward that child. Because of this, caregivers should be aware of the theories that they believe.

Summary

Knowing the principles of development helps us to understand what we observe in children. Those observations are colored by the theories we hold about the nature of children and their development. This unit has addressed some of the current issues involved in how people choose the theories that will best help in the understanding of children.

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Papalia, Diane E. and Olds, Sally W. *A Child's World: Infancy Through Adolescence, 3rd ed.* (Chapter 1)

Travers, John F. *The Growing Child, 2nd ed.* (Chapter 1)

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 1

LEARNING OBJECTIVE

Analyze a developmental sequence.

DIRECTIONS

1. Select an area of development such as gross motor skills, language, object permanence, etc. Write the area you selected below.
2. Using appropriate references, list the general developmental sequence during the first year of life for the area of development chosen.
3. Arrange to observe a three-month-old, a six-month-old, and a twelve-month-old together or separately.
4. Record your observations of the unfolding of the developmental sequence identified in #2.
5. Answer the questions below.

Developmental Area: _____

Developmental Sequence:

Observations:

KEY QUESTIONS

What evidence is there that most infants follow the same developmental path in the area chosen?

What evidence is there that infants go through this developmental sequence at different rates?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 2

LEARNING OBJECTIVE

Identify the general patterns of development.

DIRECTIONS

1. Observe a group of infants, looking for evidence of the developmental principles listed below.
2. Describe how these patterns of development were observed in the infants' motor skills.
3. Answer the question below.

OBSERVATIONS

Head-to-toe development:

Near-to-far development:

Simple-to-complex development:

General-to-specific development:

KEY QUESTION

Why is it important for people who work with children to know the general patterns of development?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 3

LEARNING OBJECTIVE

Examine the reciprocal nature of development.

DIRECTIONS

1. Plan a game to use with preschool children which would promote development in one or more of the following areas: physical, emotional, social, or intellectual. (e.g., London Bridge, The Farmer in the Dell)
2. Arrange to play the game with a group of children.
3. Observe and record events.
4. Answer the questions below.

OBSERVATIONS

KEY QUESTIONS

In what ways did the game promote physical development?

How did the game promote emotional development?

How was social development promoted in the game?

How did the game promote intellectual development?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 4

LEARNING OBJECTIVE

Explore the need for observers to understand the importance of individual differences.

DIRECTIONS

1. Observe a group of children the same age.
2. Using the categories below, discuss all the ways that children appear to be different from each other.
3. Answer the question below.

Analyze how children are different in terms of:

- physical development

- emotional development

- social development

- intellectual development

KEY QUESTION

Why is it important to understand differences in physical, emotional, social, and intellectual development of children?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 5

LEARNING OBJECTIVE

Apply observation skills using the techniques for a running record and an anecdotal record.

DIRECTIONS

1. Arrange to work in partnership with a classmate.
2. As partners, arrange to observe the same child at the same time (during free play). One student will use the running record technique while the other will use the anecdotal record technique.
3. Complete the information at the top of the form provided.
4. Observe the child for 30 minutes. (Remember that with the running record, everything the child says and does is recorded as it happens. With the anecdotal technique, the events are recorded after the observation period ends.)
5. Interpret the meaning of the behaviors observed, if appropriate.
6. Read the observations and interpretations of your partner.
7. Answer the questions below.

KEY QUESTIONS

How did your observations compare with your partner's observations? How were they similar? How were they different?

How did your interpretations compare with your partner's interpretations? How were they similar? How were they different?

What types of information seemed to be gathered with each technique?

How did the type of observation technique used affect interpretations of the behaviors?

OBSERVATION FORM

Observer's Name: _____ Date: _____
Age of Child Observed: _____ Starting Time: _____
Observation Setting: _____ Ending Time: _____

Type of Observation Technique Used: (circle one)

Anecdotal Record Running Record

FACTS	INTERPRETATIONS

FACTS	INTERPRETATIONS

33

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 6

LEARNING OBJECTIVE

Use a developmental checklist during observation.

DIRECTIONS

1. Arrange to observe a 18-and 24-month-old toddler.
2. Using the developmental checklist form provided, indicate whether the normative behavior was observed during the observation period by placing a check under the "observed" column. If the behavior was not observed, ask a caregiver familiar with the child whether or not that behavior has been observed. If so, place a check under the "caregiver" column. Write your comments in the appropriate column.
3. Answer the questions below.

KEY QUESTIONS

Based upon this observation, what did you learn about the child's motor development?

What are the advantages of this recording technique?

What are the disadvantages of this type of observation?

When would a developmental checklist be most useful?

DEVELOPMENTAL CHECKLIST

Observer's Name: _____ Date: _____
Age of Child Observed: _____ Starting Time: _____
Observation Setting: _____ Ending Time: _____

BEHAVIOR	OBSERVED CAREGIVER	COMMENTS
Walks without support.		
Walks fast or runs stiffly for a distance of six feet.		
Balances on feet in a squat position while playing.		
Walks backward four steps without losing balance.		
Bends over, picks up an object from the floor, and stands up straight without falling.		
Standing, can kick a ball without falling.		
Sits down in a small chair without help.		
Standing, can throw a ball.		
Can jump in place at least twice.		

SELF-EVALUATION FOR LABORATORY EXPERIENCES

Name of Student: _____ Date: _____

Course Instructor: _____ Course: _____

Lab Experience: _____

Briefly describe the events of your experience.

Answer the following questions.	Yes	No	N/A
1. Did I read the unit overview and assigned readings?	☐	☐	☐
2. Did I read the lab experience carefully before beginning?	☐	☐	☐
3. Did I follow the directions?	☐	☐	☐
4. Did I arrive on time as planned?	☐	☐	☐
5. Were my materials or equipment ready?	☐	☐	☐
6. Did I know the assignment well enough to carry it out without referring to notes?	☐	☐	☐
7. Did I introduce myself to the caregiver and children?	☐	☐	☐
8. Did I achieve the learning objective for the lab experience?	☐	☐	☐
9. Were my personal goals for the experience achieved?	☐	☐	☐

Describe what you feel you accomplished as a result of this experience.

How could you improve your performance?

PARTICIPATION EVALUATION

Name of Student Observed: _____ Date: _____
Course: _____

Name of Instructor Evaluating: _____

Lab Activity: _____

Setting for the Observation: _____

Description of the Student's Performance:

EVALUATION CHECK LIST

General:	Superior	Good	Fair	Poor	N/A
Planning	☐	☐	☐	☐	☐
Age-appropriateness	☐	☐	☐	☐	☐
Preparation of materials	☐	☐	☐	☐	☐
Introduction to the experience	☐	☐	☐	☐	☐
Carrying out the plan	☐	☐	☐	☐	☐
Quality of initiating	☐	☐	☐	☐	☐
Quality of responding	☐	☐	☐	☐	☐
Voice tone	☐	☐	☐	☐	☐
Use of language	☐	☐	☐	☐	☐
Specific*					
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐

COMMENTS

*The instructor will fill in specific behaviors to be observed based on the lab experience. This should be done before the student is observed.

Performance Objectives

Theories of Child Development Unit II

Biological Approaches

- Explain the importance of Gesell's normative/maturational theory.
- Explain the major contributions of theories of ethology.

Stimulus-Response Approaches

- Define the major elements of classical conditioning.
- Describe operant conditioning.
- Differentiate social learning theory from the other stimulus-response theories.

Psychoanalytic Approaches

- Explain the major contributions of Freud's theory of psychosexual development.
- Describe Erikson's theory of psychosocial development.

Cognitive Developmental Approaches

- Describe information processing theory.
- Explain Piaget's stage theory of cognitive development.
- Explain the importance of Mead's symbolic interaction theory.

An Overview

This unit reviews how different theories organize information about the developmental changes children usually experience. Some of the more influential and useful theories of child development have been chosen as a focus. Four major categories of developmental theories will be reviewed:

- biological approaches
- stimulus-response approaches
- psychoanalytic approaches
- cognitive approaches

Biological Approaches

Most developmental theories have a biological basis, but some have a stronger "nature" focus. Two such theories which have been important to the field of child development are *normative/maturational* and *ethological* theories.

Normative/Maturational Theory

A theory which has had a great impact on the study of changes in children is the normative/maturational theory of Arnold Gesell. He believed that mental growth can be seen in physical skills and behavior. He felt these develop as a result of physical maturation and have less to do with external influences from the environment.

Gesell and his co-workers recorded detailed observations of thousands of children. From these observations, they developed *norms* which tell when children normally show certain skills or behavior. For instance, these norms tell us the average weight for an 8-month-old or the average age that children begin to walk alone.

This information about average growth and abilities was used in several ways. Tests were developed to diagnose developmental delays in children. Detailed descriptions of "behavioral stages" were developed. This "ages and stages" approach links specific ages with specific behaviors. For example, "the terrible twos" is described as a stage of negativism that the child will outgrow. These norms were also used as evidence to support Gesell's principle of maturational readiness.

Maturational readiness means that a child must be mature enough in a given area before training in that area is effective. If all behavior were simply learned, certain skills would emerge at widely different ages, depending on the training given. Instead, the norms show that in the early years, most children develop the same skills at about the same time–at least within certain age ranges. For instance, it does not matter how much training an infant receives, toilet training will not be achieved until sphincter muscles have matured enough.

Because it told parents what to expect, Gesell's theory was very popular among parents. The norms were widely used to educate the public about the differences in abilities of children of different ages. Charts using Gesell's normative data are still used for reference, many developmental tests have used his norms, and the ages and stages approach to understanding children is still popular. Finally, the idea of maturational readiness has become a very important part of our thinking about children and how they learn.

Ethological Theory

Ethology, another biological theory of development, is the study of animals and humans in their natural environments. Ethology focuses on the built-in, or *innate*, responses people have to certain things in the environment (certain *stimuli*). These responses to specific stimuli do not have to be taught. They come naturally when the person receives the specific stimulation.

These innate responses may be reflex behaviors as simple as a sneeze in response to pepper, or they may be more complex patterns of behavior. For instance, John Bowlby used ethology when he explained that an infant's emotional attachment to its mother is an innate response to caregiving. Konrad Lorenz, an ethologist, explained aggression in adolescents as innate behavior.

These *unlearned reactions* are *adaptive*. That is, they help the child adapt more easily to its environment so it will have a better chance to survive. Learned behavior can also be adaptive. When many individuals adapt well to the environment, the species is more likely to survive, too.

Ethology suggests other notions which are useful to child development. The first, ethological validity, is an emphasis on observing and describing *behavior in natural settings*. This ensures that the behaviors observed are likely to occur in real life situations. Another important contribution is the idea of sensitive periods.

Finally, ethology emphasizes *comparative research*, which has had an impact on the field of child development. Human behaviors are sometimes compared to behaviors seen in animals such as other primates or rats. A behavior found in many differ-

ent species is more likely to be innate in humans. Even with learned behaviors, we can gain important insights about human behavior by observing other species. *Cross-cultural studies* use another type of comparison. Behaviors in one culture are compared to those found in another. A behavior found in many different cultures is more likely to be innate in humans.

Stimulus-Response Approaches

The stimulus-response (S-R) approach does not use biology to explain developmental change. Behaviorism, learning theory, and association theory are three common terms used to refer to this approach. This approach views the child as merely passively responding to stimuli in the environment. John Watson, who established this approach in American psychology in the early part of this century, felt that motives and mental processes are not important. Watson developed his ideas about association from the work of Ivan Pavlov.

Classical Conditioning

Pavlov discovered that in dogs, a reflex could be learned, or *conditioned*. Dogs naturally salivate when food is placed in front of them. This reflex (salivating) is called an *unconditioned response* to an *unconditioned stimulus* (food). Pavlov's dogs heard a bell each time they received food. He noticed that the dogs learned to salivate when the bell was rung, even when the food was not there. The bell, then, became a *conditioned stimulus* because it was associated with food. When the dogs salivated in response to the bell, Pavlov called it a *conditioned response*.

In summary, a dog's reflex is to salivate in repsonse to food. When food is associated with something else, like the bell, the dog salivates in response to the bell alone. This is *classical conditioning*. If the bell is then rung many times without food, the dog eventually stops salivating when the bell is rung. This is called *extinction*.

These conditioned responses are found in humans, too. People who get sick from eating spoiled tuna may still gag every time they smell tuna, whether it is spoiled or not. Smelling tuna (the conditioned stimulus) is associated with tasting spoiled food (the unconditioned stimulus). So, even smelling tuna causes gagging (the conditioned response). In the same way, we may learn to associate fear and other emotions with certain things in the environment. We may or may not be aware of these associations we have made. Children are not usually aware of the associations they make.

Learning theorists believe stimulus-response associations cause the important changes in development. But not all of them think that learning has to occur through associations involving reflex actions. Operant conditioning theorists believe that learn-

ing occurs through the consequences of our own actions. Social learning theorists believe we learn by what we observe others doing.

Operant Conditioning

The basic principle of *operant conditioning* theory is E.L.Thorndike's *law of effect*. This law states that the effect of an action determines whether or not a person will behave that way again. A behavior which leads to something pleasant will be likely to happen again, while a behavior which leads to something unpleasant will be less likely to happen again. So, behaviors are conditioned, or learned, by the consequences which follow them.

According to B.F. Skinner, a modern behaviorist, these consequences may be *punishments* (unpleasant experiences), or *reinforcements* (pleasant experiences). Reinforcements are either positive or negative. A *positive reinforcement* is a consequence that is pleasant in and of itself. For example, praise is usually a positive reinforcement for any behavior.

When an unpleasant stimulus is removed, the behavior that removed it is reinforced. (This is *negative reinforcement*.) For instance, the crying of a baby is an unpleasant stimulus to most adults. When an adult responds appropriately to the infant's needs, the crying soon stops. Crying (the unpleasant stimulus) is removed (negatively reinforced) when the response is appropriate, so the adult is likely to respond that way again.

Skinner believes that behavior can be changed by carefully planning the consequences that follow a child's behavior. In his theory, it does not matter why a child acts a certain way. Behaviors can be strengthened, or made to happen again, by making the consequences pleasant. Or, behaviors can be extinguished, or stopped, either by making the effects unpleasant or by removing a reinforcer.

This process, called *behavior modification*, requires that each child be considered individually when planning consequences for behaviors. Reinforcers and punishments should be chosen only after carefully observing a child's behaviors. What is pleasant to one child may be unpleasant to another, or what is pleasant at two years may be unpleasant at ten.

Social Learning

According to *social learning* or modeling theory, the most important conditioning or learning takes place by observing the actions of others. When these actions are imitated, they are likely to be repeated as long as the child is then reinforced for showing those behaviors. For instance, a child sees others hugging, then turns and hugs a friend. The friend smiles, so the child is reinforced to hug again.

Albert Bandura, a social learning theorist, believes behavior can be modified by using models. A *model* is anyone who shows a behavior others observe. If children see aggression being modeled they may try to imitate that behavior. If they are then reinforced for behaving that way, they are more likely to be aggressive again.

Social learning theory focuses on mental processes more than the other theories do. However, all the stimulus-response theories stress that environmental factors determine behavior and explain developmental changes.

Psychoanalytic Approaches

Psychoanalysis means analysis of the psyche or mind. Since all modern *psychoanalytic theories* are based on Sigmund Freud's theory of psychosexual development, it is necessary to at least outline the basis of his theory before discussing the others. While parts of Freud's theory of personality development are no longer considered useful tools of explanation, he made some very important contributions to the understanding of child development.

Freud's Theory of Psychosexual Development

Freud believed mental processes are the basis for personality. He said the mind is made up of three types of mental processes. These are the Id, the superego, and the ego.

The *id* includes all the instincts and drives a person has. The id "wants what it wants when it wants it," regardless of the consequences. An example of this is a child's desire for food, right now! However, the *superego*, or conscience, includes all the things learned from society to be right and wrong. For example, the child learns that stealing food from others is wrong, so stealing food produces guilt.

Mental processes known as the *ego* emerge to act as a referee between the id and the superego. This rational part of the mind tries to determine how to satisfy the id as much as possible without breaking the superego's rules. For instance, the child figures out that a baseball card can be traded fair and square for a candy bar. Such ego mental processes develop as a result of physical maturation and early relationships with parents.

Freud felt that everyone is born with a set amount of sexual energy, or *libido*, in the nervous system. As the child matures physically, this energy moves around at different ages to concentrate in different parts of the body's nervous system (erogenous zones). Because Freud thought mental life, or personality, is based on these changes in the libido, his theory is called a theory of psychosexual development. The psychosexual stages of development follow the movement of the libido through the

body as the child matures. These stages and approximate ages are:

- Oral (birth to 1 year)
- Anal (1 to 3 years)
- Phallic (3 to 6 years)
- Latency (6 years to puberty)
- Genital (adolescence and adulthood)

In each of the stages except latency the child's most important activities and learning center around that part of the body where libido is focused. For example, during the first year (the oral stage), the main sources of satisfaction and frustration for the infant come from oral actions like sucking, biting, and eating.

According to Freud, all children must move through these stages in order for the ego to develop normally. There must also be some, but not too much, satisfaction and frustration at each stage in order for the child to become an adaptive adult. The goal of this developmental process is an adult who can love and work successfully.

Freud also suggested some mental processes that are extremely important in explaining how children cope with anxiety and stress. The ego will protect the child from stress through largely unconscious processes. Four of these unconscious *defense mechanisms* are explained as follows:

- In *repression*, threatening thoughts are repressed so the child is not aware of having them. (Many children who have been abused do not remember the abuse.)
- In *reaction formation*, emotions which are unacceptable to the superego are switched to the opposite emotions. (Children who are jealous of a new sibling may go overboard showing affection.)
- In *projection*, unacceptable feelings are attributed to others rather than the self. (Children who are afraid of something will often accuse another child of being afraid.)
- In *regression*, anxiety becomes too great and the child reverts to an earlier level of development. (Toilet trained children who experience stress often begin to wet or soil their pants again.)

Freud made many contributions to understanding children. He believed that personality develops very early in life and that normal development depends on the kinds of relationships very young children have with their parents. Freud suggested that the values of society are *internalized*, or taken as one's own, through interactions with parents. The superego, or conscience, is based on these internalized values. The process of identification with the same-sex parent is necessary before their values can be internalized. *Identification* means wanting to be like another person who is important to the child because that person is lived or is powerful.

Freud also recognized that children have powerful sensual feelings. Finally, he suggested that unconscious mental processes help to protect us from extreme anxieties often related to childhood experiences. All of these Freudian concepts have had a great impact on how people interpret and explain the behavior of children.

Erikson's Theory of Psychosocial Development

As a student of Freud, Erik Erikson accepts the basic concepts of psychosexual theory. However, he feels that social and cultural influences are also important in human development. This is why Erikson's theory is called a theory of psychosocial development. Erikson proposes eight stages, or *phychosocial crises*, of development which are based on the interaction of physical maturation with the social environment. These stages are:

PSYCHOSOCIAL STAGE	PSYCHOSOCIAL CRISIS
Oral-Sensory (0-1 yr.)	Trust vs. Mistrust
Anal-Musculature (1-3 yrs.)	Autonomy vs. Shame & Doubt
Genital-Locomotor (3-6 yrs.)	Initiative vs. Guilt
Latency (6 yrs. to puberty)	Industry vs. Inferiority
Adolescence	Identity vs. Role Confusion
Young Adulthood	Intimacy vs. Isolation
Adulthood	Generativity vs. Stagnation
Maturity	Ego-integrity vs. Despair

Each stage involves a basic conflict about one's social identity which must be resolved by the ego. When the crisis is successfully resolved, the ego is strengthened. Only then is the ego prepared to cope with the demands of the next developmental level.

For example, during the oral-sensory stage of development, if an infant's needs for comfort, food, stimulation, etc., are consistently met, the infant develops a basic sense of trust. Because of trust and the sensory information being received from the environment, the toddler is more likely to feel confident. Confidence helps the toddler develop a sense of autonomy or independence. This autonomy enables the child to develop a sense of initiative in early childhood. With these feelings, the child will be more likely to feel competent during middle childhood, as he or she learns to master the tasks of society.

In adolescence, this child will be prepared to decide what role to play in society. With a strong sense of identity, the person will be able to establish intimate friendships and satisfying heterosexual relationships. As an adult, the person will have the ego strength to perform expected roles and be a productive member of society. Finally, in maturity, he or she is more likely to be able to accept the life lived, feeling it to be full and complete.

The person who is unsuccessful in resolving all of these crises will experience the poositive results of those described above.

Families, schools, communities, and the society all have a role in helping people at each stage resolve the crisis successfully. Erikson's theory is important because it explains how social factors influence development. It also looks at development across the entire life span.

Cognitive Developmental Approaches

Cognition refers to the process of knowing or understanding. In order to survive, human beings need to understand their physical and social environments. Cognitive developmental theories focus on how children develop such understanding. Mechanistic approaches such as information processing theory focus on learning and experience. Organismic theorists such as Jean Piaget emphasize the child's own curiosity and activity as the basis for change. George Herbert Mead's symbolic interaction theory focuses on the dynamic interaction between the child and society to explain this understanding.

Information Processing Theories

Information processing theories, such as those by Robert Gagne and Jerome Bruner, explain how children learn to process information in more and more complex ways. These theories stress quantitative changes. Human thinking processes are compared to computer processes. Complex cognitive skills are built up through experience with more basic skills. Information processing theorists believe that when children are helped to learn these skills, they can think better.

In these theories, cognition involves the following:
- learning to pay attention to the most important stimuli.
- learning better strategies to aid memory.
- learning the necessary thinking skills.
- learning rules of logic.

Piaget's Stage Theory

Piaget's *Stage Theory of Cognitive Development* places more emphasis on maturation and changes within the child. Borrowing from ethology, Piaget believed each person has an innate, or inborn, tendency to adapt to the environment.

Processes of Development. In cognitive development, *adaptation* involves two processes - assimilation and accommodation. In *assimilation*, a new concept is added to thoughts the child already has. For example, when a child thinks all dogs look like the family beagle, he will soon have to assimilate the new information that poodles are also dogs. New information is added, but the old information is still true, too.

In *accommodation*, the old concept has to be changed before thenew information makes sense. When a child who thinks that all animals with four legs are dogs is told that a cow is not a dog, the child will have to accommodate by changing his or her concept of dog. In order to make sense of new information, the mind constantly uses the processes of assimilation and

accommodation as the child interacts with the environment.

According to Piaget, human beings also have an inborn tendency toward *organization*. Cognitive processes are organized into systems. These organized patterns of behavior and thought are called *schemes*. The first schemes an infant has are physical reflexes. As the child experiences the world, assimilation and accommodation occur, and the patterns of behaving and thinking change. The way these schemes change depends upon the child's stage of cognitive development. Piaget suggested four such stages:

- *Sensorimotor period* (birth to around 2 years)
- *Preoperational period* (around 2 to 6 or 7 years)
- *Concrete operations period* (6 or 7 to 11 or 12 years)
- *Formal operations period* (11 or 12 years through adulthood)

Sensorimotor Period. During the sensorimotor period, schemes develop through the infant's senses and motor activities. For the infant, activity *is* thought. At first, these activities are simply reflex movements. Gradually, they develop into intentional actions. The infant also slowly comes to understand that objects exist even when they cannot be sensed through sight, touch, hearing, taste, or smell. This is called *object permanence*, and it signals that the child can use mental images or symbols in order to think.

Preoperational Period. The preoperational period begins when the child develops true *symbolic thought*. With symbolic or *representational* thought, children can use symbols to stand for something else such as people, places, things, events, or concepts. For example, mental images and words and numbers are symbols. During the preoperational period, schemes, or patterns of thought, develop through symbolic activities. Some of these activities include:

- using words to stand for objects or concepts (language)
- pretending an object is something else (symbolic play)
- imitating something no longer present (delayed imitation)

During the preoperational period, children come to understand things are the same even when appearances change. (When a boy dresses like a girl, he still remains a boy.) This is called understanding *identities*. Also during this period, children come to know basic relationships between events. (Being awake is somehow related to the sun shining.) This is called understanding *functions*. However, just because they know two things are related does not mean children think logically about *how* they are related. They often mistakenly conclude that one thing causes another. (The sun is shining *because* I am awake.) This is called *transductive reasoning*.

Perceptions dominate children's thinking during this period. They can understand what they can see, feel, hear, touch, and smell. Children perceive things even when they are only dream-

ed or imagined. A monster seen on TV or in a dream is still "seen." This is why preoperational children have trouble knowing the difference between things that are real and things that are imagined or dreamed.

During the sensorimotor period children gradually come to know that they are separate from their environment. By the beginning of the preoperational period, children gain a sense of self. However, they still cannot imagine how another person would perceive what they perceive. If a child holds a picture for someone to look at, the child will keep it turned toward himself, not the other person. Children have trouble understanding that others have thoughts which are different from theirs. This *egocentrism* is a normal part of cognitive development. It is due to an immature nervous system and lack of experience, *not* to selfishness and stubborness.

Egocentrism is related to the child's inability to take into account more than one aspect of a situation (*centration*). The young child's thoughts are focused only on the most obvious feature of an object or event. Other perceptions are ignored because the child's mind has not matured enough to think about too much information at once. For instance, the child can sort objects by size or by shape, but not by both.

Concrete Operations Period. The period of concrete operations begins when the child is able to use symbols well enough to perform mental operations. Schemes now develop from logical thought processes, although these mental activities are still tied to concrete experiences.

During the period of concrete operations the children can hold two or more aspects of a situation in mind at once (*decenter*). It is now possible for a child to sort by shape, size, and other dimensions at the same time (*classification*). Children also understands the relationship between a whole and its parts (*class inclusion*). Finally, a child can understand that physical operations on objects can be undone (*reversibility*) and that two equal quantities remain equal even when they are rearranged (*conservation*).

Formal Operations Period. The period of formal operations begins when the child is able to think abstractly. Schemes now develop from logical, abstract thought. The adolescent makes hypotheses, or predictions, about possible solutions to problems and then systematically tests those hypotheses (*hypothetico-deductive* thought). Piaget stops here, but some theorists believe there is another stage of cognition called *post-formal operations*. In this stage, the person is able to systematically find problems as well as solutions.

Implications. Piaget's stage theory of cognitive development has made a great impact on how we view children. It provides insights into children's behavior which focus on the child's curiosity and natural tendency to interact with the environ-

ment. This has many implications for teachers, parents, and others who want to help children learn about their world.

Mead's Symbolic Interaction Theory

Symbolic interaction is a theory of cognitive, social, and personality development. Mead's theory explains how children come to understand themselves, others, and society. It explains how society influences the individual, but it also explains how the individual influences society. This dynamic interaction perspective focuses on the interactions between the child and the social environment.

According to Mead, symbolic thought is the most important mental process. Members of a society share certain symbols. That is, everyone knows what certain things mean—we share the meanings of our society. For instance, in our society the English language is a system of symbols which we share. We also share meanings for symbols like gestures. We all know that an open, waving hand means "hello" or "goodbye," depending on the context. Humans communicate through these systems of symbols. Mead called this *symbolic communication*.

As children interact with others through symbolic communication, they develop concepts about themselves, others, and society in general. When children are able to think and communicate with symbols, they begin to "take the role of the other." At first, during play they act out various roles of society. When they play house or hospital, they communicate with other children and adults about how mommies and daddies or doctors and nurses act. Through this type of *symbolic play*, children not only learn the behavior expected from certain social roles, but they also learn how other people think and feel.

Since a concept of self cannot develop apart from a concept of others, this role-taking helps a child develop a healthy self-other system. Children become able to consider their own needs, but they are also able to consider specific others and society in general. This integrated system of self-other concepts develops in three stages:

- *Imitation* (around 2 to 3 years)
- *Play* (around 3 to 6 or 7 years)
- *Game* (around 6 or 7 years through adolescence)

Imitation Stage. As children mature and interact with others, symbolic thought and self-awareness emerge. This marks the beginning of the imitation stage. The two-year-old remembers how others act and will copy that behavior. This mimicking is often very accurate and may even seem "insightful," but the child has very little, if any, real understanding of the meanings behind the actions.

Play Stage. By age three, children understand enough of the society's language to share its meanings. Now, they can role-take, but these roles are limited to the roles played by *significant others*, or people who are important to the child. At first,

these significant others are parents and others who give care and affection. This circle of significant others widens as the child has more social experiences.

By taking the roles of significant others like father, teacher, or favorite cartoon hero, a child begins to understand not only how people in society relate to each other, but also begins to think about how these people view him/her. Children must learn to see themselves as the significant others see them so they will be able to know what is approved of and what is not. This process helps children begin to internalize the values of their significant others.

In symbolic play, children negotiate about the "proper" behavior and attitudes for the roles being played. This important process helps children understand that there may be several alternatives in how to play a role. Symbolic play also allows children to generalize from a specific individual to a social role. They move from knowing "My mommy feeds me" to knowing "Mommies feed their children."

Game Stage. Schoolage children carry this generalization from specific roles to sets of roles. They begin to be able to take all the perspectives of a group of people at the same time. For instance, in a baseball game, a player must know which roles the other players have and how those roles relate to one another and to his or her role. When playing a board game, a player must know what strategies the other players are likely to follow and how these relate to the player's personal strategies. This stage involves much negotiation between children about the rules of the games. This process is necessary for an understanding that rules and social roles are not just arbitrary, but that they are simply agreements between people.

Taking the roles of whole groups of people at the same time is called taking the role of the *generalized other.* At first, these groups are usually peer groups. With more social experiences the child is finally able to take the perspective of society as a whole. When children internalize the values and attitudes of significant others they say things like, "Mommy says stealing is wrong." Older children often remark, "They say stealing is wrong." When pressed, a child may not be sure who "they" are, but the child *is* sure that they would think stealing is wrong. Of course, the "they" in question is society, or the child's generalized other.

Implications. Mead's theory implies that informal social interactions such as play and games are vital to cognitive development. These are also necessary for the development of a mature concept of self, a clear understanding of society, and a healthy attitude about how these are related. When children are not allowed to play informally or negotiate social roles and rules among themselves, concepts of self and society may be distorted. These concepts affect children's feelings and actions toward themselves and others.

Four theoretical approaches to explaining development were reviewed. The biological approaches stress the importance of maturation and physical influences on all other aspects of development. The stimulus-response approaches are concerned with the influences of the environment on the child and the child's responses to those influences. The psychoanalytic approaches stress emotions and motivations in development. Finally, the cognitive developmental approaches focus on how children come to understand their worlds.

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Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 7

LEARNING OBJECTIVE

Identify examples of adaptive behaviors in children.

DIRECTIONS

1. Observe a small group of children of different ages in a natural setting for 30 minutes.
2. Keep a running record of the behaviors observed.
3. Answer the questions below.

KEY QUESTIONS

Which behaviors observed might be important to a child's safety or survival?

(Example: Sudden crying brought an adult to see if someone is in danger, or it made the other children stop and pay attention.)

What other examples of behaviors might increase the children's chances of safety or survival? List the behaviors and explain how they are adaptive.

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 8

LEARNING OBJECTIVE

Apply social learning principles.

DIRECTIONS

1. Observe a group of children and adults during several activities.
2. Record instances where a child imitated an adult or another child.
3. Answer the questions below.

KEY QUESTIONS

What examples of modeling behaviors did you observe in the adults? Which of these were intentional and which were unintentional?

What examples of modeling behaviors did you observe in the children? Which of these were intentional and which were unintentional?

Describe behaviors the adults attempted to model, but which were not imitated.

Did the adults direct any of the children to model behavior for other children? If so, was the request made appropriately? Was the modeling effective?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 9

LEARNING OBJECTIVE

Examine Freud's theory of psychosexual development.

DIRECTIONS

1. Review descriptions of Freud's defense mechanisms.
2. Observe a group of young children one hour a day for several days.
3. Record examples of defense mechanisms observed.
4. Answer the questions below.

KEY QUESTIONS

Describe the defense mechanisms used by the children you observed.

Which defense mechanism was the most common in the group you observed? Why do you think this defense is so common in young children?

In which instances were the defense mechanisms adaptive? In which instances did the defense mechanisms seem harmful? Explain.

How did the caregivers handle the children's use of defense mechanisms? Were these responses appropriate or inappropriate? Explain.

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 10

LEARNING OBJECTIVE

Examine the cognitive-developmental theory of Piaget.

DIRECTIONS

1. Choose a Piagetian task (e.g., conservation, reversibility, object permanence).
2. Obtain the materials necessary to perform the activity.
3. Devise a way to determine if a child is able to perform the task selected.
4. Select a child within the appropriate age level and administer the activity.
5. Answer the questions below.

KEY QUESTIONS

Describe the activity which was chosen.

Describe the child's performance on the task.

Was the task appropriate to the developmental level of the child? Explain.

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 11

LEARNING OBJECTIVE

Explore Mead's symbolic interaction theory.

DIRECTIONS

1. Select, plan, or create a game (such as a board game, ball game, etc.) for schoolage children.
2. State the specific conditions for the game.
   a. age(s) of children: _____
   b. number of players: _____
   c. type of playing area: _____
   d. other: _____
3. Take the game to a park, recreation center, preschool, or other place where there are children.
4. After securing permission, invite the children to play.
5. Evaluate the game by answering the questions below.

KEY QUESTIONS

Was the game competitive, cooperative, or both? Describe.

Did the game require the children to take the actions of others into account? How?

Did the game require the children to take the thoughts of others into account? How?

Did the game require the children to take the feelings of others into account? How?

Was there a negotiation of rules? If so, describe what was negotiated, who negotiated, and how the negotiation was resolved.

Which commonly accepted values of society were reinforced in the game? How?

Why are the social interactions in games important to all aspects of development?

SELF-EVALUATION FOR LABORATORY EXPERIENCES

Name of Student: _____ Date: _____

Course Instructor: _____ Course: _____

Lab Experience: _____

Briefly describe the events of your experience.

Answer the following questions.	Yes	No	N/A
1. Did I read the unit overview and assigned readings?	☐	☐	☐
2. Did I read the lab experience carefully before beginning?	☐	☐	☐
3. Did I follow the directions?	☐	☐	☐
4. Did I arrive on time as planned?	☐	☐	☐
5. Were my materials or equipment ready?	☐	☐	☐
6. Did I know the assignment well enough to carry it out without referring to notes?	☐	☐	☐
7. Did I introduce myself to the caregiver and children?	☐	☐	☐
8. Did I achieve the learning objective for the lab experience?	☐	☐	☐
9. Were my personal goals for the experience achieved?	☐	☐	☐

Describe what you feel you accomplished as a result of this experience.

How could you improve your performance?

PARTICIPATION EVALUATION

Name of Student Observed: _____ Date: _____
Course: _____

Name of Instructor Evaluating: _____

Lab Activity: _____

Setting for the Observation: _____

Description of the Student's Performance:

EVALUATION CHECK LIST

General:	Superior	Good	Fair	Poor	N/A
Planning	☐	☐	☐	☐	☐
Age-appropriateness	☐	☐	☐	☐	☐
Preparation of materials	☐	☐	☐	☐	☐
Introduction to the experience	☐	☐	☐	☐	☐
Carrying out the plan	☐	☐	☐	☐	☐
Quality of initiating	☐	☐	☐	☐	☐
Quality of responding	☐	☐	☐	☐	☐
Voice tone	☐	☐	☐	☐	☐
Use of language	☐	☐	☐	☐	☐
Specific*					
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐

COMMENTS

*The instructor will fill in specific behaviors to be observed based on the lab experience. This should be done before the student is observed.

Performance Objectives

Prenatal Development and the Neonate Unit III

Physical Processes

- Explain the basic genetic components and processes.
- Identify methods of diagnosing birth defects prenatally.
- Describe the process of conception.
- Describe the abilities and activities of the fetus.

Prenatal Environmental Influences

- Identify factors in the uterine environment which may cause fetal development to be altered.
- Explain the importance of the three trimesters of fetal development.
- Identify parental characteristics which affect prenatal development.
- Explain the importance of medical care to prenatal development.
- Describe the possible effects of poverty on the prenatal environment.

Birth Processes

- Describe the stages of labor.
- Explain the various methods of delivery.
- Describe the roles of fathers during the birth process.
- Describe the possible effects of the methods of delivery.

The Neonate

- Describe hospital procedures for treating the neonate immediately after its birth.
- Describe the appearance of the typical newborn.
- Explain how the body systems of the neonate make the transition from the uterine environment.
- Identify the reflexes present at birth.
- Identify the sensory abilities of the newborn.
- Differentiate among the states of the neonate.
- Describe the bonding process between parents and infant.

An Overview

Physical processes dominate prenatal development. Many factors can affect development at different times and in different ways. The birth process plays an important role in healthy development. The newborn has special characteristics which help it to begin life. During this time, parents and others play special roles. The risks of this period can be reduced if there is an understanding of the developmental processes before and soon after birth.

Physical Processes

During *prenatal* development, the embryo and fetus undergo many physical changes. *Genetic* or hereditary processes guide physical development from conception through birth.

Genetic Processes

Each cell in the human body contains about one million *genes*. These unique proteins direct the growth and functioning of the body. The genes are formed into spiraling chains called *chromosomes*. Each human cell has 46 chromosomes, arranged to form 23 pairs. In one body, each cell has the same *genetic code* or organization of genes as all the other cells.

There is one exception to the rule of cells having 46 chromosomes arranged into 23 pairs. In the sex cells (*sperm* and *ova*), there are no pairs–each sex cell has only 23 chromosomes. When the sperm and egg cells unite, the 23 chromosomes from each one join to create a cell with 46 chromosomes arranged into 23 pairs. The genetic messages from these 46 chromosomes tell the cell how to divide and organize so it grows into the structure we know as a human being.

Inheritance. When the genes from both parents pair up they are passed on to the child. This causes certain biological traits to be *inherited* from each parent. Some genes are dominant over others (like the gene for brown eyes), and some are recessive (like the gene for blue eyes). When one parent's dominant gene (brown) pairs up with the other parent's recessive gene (blue), the child shows the trait of the dominant gene (brown eyes). This is called *dominant inheritance*. When the recessive genes of two parents pair up, the child will inherit the recessive trait

(blue eyes), even though both parents show the dominant trait (brown eyes). This is called *recessive inheritance*.

Every child born has a 1 in 4 chance of showing the recessive trait, a 2 in 4 chance of being a "*carrier*" by having the hidden trait, and a 1 in 4 chance of having two dominant genes. These ratios become important to parents who may wonder about their chances of having a child with an inherited defect or disease.

Genetic Changes. Other genetic processes cause the genetic code to change. When cells divide, they usually repeat the genetic code exactly, but not always. *Translocation* occurs when a gene moves from its original location on the chromosome to another. *Mutation* is a sudden change in the genes which can be passed on to the next generation. Mutations are often caused by environmental assaults on the cells, such as radiation or chemical exposure. When these genetic changes are undesirable, the results are often referred to as *birth defects*.

Birth Defects

In the U.S. every year, over a quarter of a million babies are born with physical or mental defects. Many of these *congenital defects*, or defects present at birth, have a genetic basis. Parents at risk for having a child with genetic birth defects may be advised to have *amniocentesis*. A sample of fluid is taken from the *amniotic sac* surrounding the fetus, and these cells are examined for genetic problems. A more common way to check for problems is through a *sonogram*. With a sonogram an ultrasonic picture produced by soundwaves can show structural problems. Finally, using fiberoptic needles inserted through the abdomen, the inside of the womb can be viewed by doctors.

The mother's body often rids itself of a defective fetus by *spontaneous abortion*, or miscarriage. However, if this does not happen, the family may face some difficult decisions. Some conditions can now be medically treated before birth. Others can be treated at or soon after birth, so long-term effects can be avoided or minimized. However, other conditions are simply irreversible. The decisions to be made under these circumstances are not easy, and families need help to sort out the many factors to be considered.

The March of Dimes sponsors public education and scientific research about causes and prevention of birth defects. Local chapters can provide families with information and support during this difficult time. *Genetic counseling* can tell families what alternatives there are for treatment. This counseling can inform parents about their chances of having a child with genetic problems. A genetic counselor will review the parents' family histories and do special tests to find out if either one is a carrier of a known inherited disorder. Couples can then make rational decisions about having children.

Conception

Most children develop normally from conception to birth. *Conception* refers to the uniting of a male's sperm cell and a female's egg cell, or *ovum*. Each month during *ovulation*, one of the *ovaries* releases a single ovum. The ovum is caught in the *fallopian tube*, which connects the ovary to the *uterus*, or womb. The egg travels through this tube and reaches the uterus several days later. There, a mineral-rich lining has been building all month to prepare for an egg. (If a fertilized egg does not attach to this lining, it is sloughed off during *menstruation*.)

During sexual intercourse, millions of the male's sperm swim from the female's vagina, through the *cervix*, and into the uterus. Many sperm die, but the strongest swim on into the fallopian tubes in search of an egg cell. If they find one, all the sperm will attach to the ovum and secrete a substance which breaks down the ovum's protective covering. When the first sperm breaks through, all of the other sperm stop their efforts. When the sperm cell enters the egg cell, the 23 chromosomes of the egg cell and the 23 chromosomes of the sperm cell pair up. This new cell with 46 chromosomes begins dividing rapidly.

Stages of Prenatal Development

Prenatal development occurs in three stages: germinal, embryonic, and fetal.

Germinal Stage. The first stage of prenatal development, from conception to two weeks, is called the germinal stage. When the sperm penetrates the ovum, a *zygote* is created. While it undergoes rapid cell division, the zygote travels down the fallopian tube. When it gets to the uterus in three to four days, it is a fluid-filled sphere called a *blastocyst*.

Embryonic Stage. About two weeks after conception, the blastocyst attaches to the lining of the uterine wall. This *implantation* signals the start of the embryonic stage, which lasts through eight weeks after conception. The blastocyst has developed into the *embryo* and has formed the organs it needs to survive in the womb (the *placenta*, *umbilical cord*, and the *amniotic sac*). During the embryonic stage, the body's major systems and organs develop. Due to the rapid growth, this is a sensitive period for many major birth defects. (Most spontaneous abortions occur during the germinal and embryonic stages.)

Fetal State. At eight weeks after conception, the first bone cells appear. This marks the start of the fetal stage when the embryo is called a *fetus*. Body parts will continue to grow and be refined until birth, 38-42 weeks after conception.

Prenatal Activity

Toward the beginning of the fetal stage (around 8 weeks), the fetus begins to show the primitive reflex of recoiling when touched. By the third month, the fetus performs primitive breathing movements and some other reflex actions. During the

fourth month, these reflexes become stronger as the muscles develop, and the mother can soon feel the fetus move. In the fifth month, the fetus begins to show an individual pattern of activity. It kicks, stretches, and even hiccups. In the sixth month, the rate of growth slows.

By seven months, the fetus is very active, and its reflex patterns are fully developed. It responds to sounds outside the womb with increased activity. At eight months, these movements slow down since the fetus is too large to move freely. By the ninth month, the fetus begins to turn and settle into the birth position. While motor activity decreases, the senses are sharpening.

Prenatal Environmental Influences

The fetus responds to the environment outside as well as inside the womb. The uterine environment and the environment of the mother both affect development.

Uterine Environment

The environment in the uterus was once thought to be "safe" from outside influences. We now know that the placenta acts as a filter for many substances, but it is not the barrier doctors once thought. What a mother eats, drinks, and breathes has an important impact on her developing child.

Nutrition. A critical factor affecting the uterine environment is the mother's nutrition, both before and during pregnancy. Unless she eats the proper foods, the baby cannot get the nutrients it needs to develop. The most damaging effects of poor nutrition are retarded growth of nerve cells in the brain and low birth weight. If nerve cells do not develop during the first six months, they can never develop. Babies with low birth weights are more likely to have health problems and less likely to survive the first year.

Environmental Agents. There are other critical environmental factors which affect the uterine environment. These include *physical agents* such as radiation, *biological agents* like viruses, and *chemical agents* like drugs. All of these may cause developmental problems. Radiation causes genetic mutations. The measles virus causes severe birth defects when the fetus is exposed during the first three months. Toxic chemicals and drugs also have potentially harmful effects.

Street drugs such as marijuana or cocaine are known to affect the fetus. Social drugs such as alcohol, nicotine, and caffeine are also harmful. Medical drugs like hormones, antibiotics, and even aspirin should only be taken with extreme caution and under the supervision of a doctor. All drugs alter the state of the mother's body and affect the fetus, either directly or indirectly. Exposure to any physical, biological, or chemical agent should be avoided, if at all possible, during pregnancy. If the mother is exposed, medical advice should be sought immediately.

Trimesters

The damaging effects of an unsafe uterine environment may depend on when the problem occurs. These sensitive periods are often linked to *trimesters*, or three-month periods.

First Trimester. Because changes are very rapid during the first trimester, it is a sensitive period for the development of the body's major structures and systems.

The fact that many women do not know they are pregnant until well into the first trimester means that precautions may not be taken. The most effective way to prevent birth defects from developing during this period is to plan for the pregnancy so precautions can be taken from the start. This will decrease the likelihood that the baby will suffer irreversible damage or death during these critical first three months of development.

Second Trimester. During the second trimester, all of the body parts develop but are not yet fully functional. All the nerves the child will ever have are developed by the sixth month, but this nervous system is not mature. The fetus is still vulnerable to a lack of good nutrients, the effects of most chemicals, and many diseases.

Third Trimester. During the third trimester, the fetus has a much greater need for nutrients and oxygen since it is rapidly growing larger and the nervous system is still maturing. Anything which causes the fetus to get less oxygen and nutrients can be harmful during this period.

Social Factors Affecting Prenatal Development

There are many factors which affect the prenatal environment directly or indirectly. Some of these involve social aspects of the parents' lives.

Parental Characteristics. Certain characteristics of parents can affect prenatal development. For example, stress and emotional upsets create an excess of certain hormones in the mother's body. If these are always feeding into the uterus, there may be long-term effects. Fathers can have important impact on development during this prenatal period by helping the mother create the safest, most relaxed environment possible.

Medical Care. Good medical care is another factor affecting prenatal development. This should begin long before conception takes place. Before conceiving a child, a woman should have a *gynecological exam* (a medical exam of the reproductive system). This will determine if she needs help in order to carry a healthy fetus. Parents may need genetic counseling, nutritional advice, or vaccinations for certain viral diseases like rubella. After conception, good medical care is essential in order to make sure development is proceeding normally and in the safest environment possible.

Poverty. One social factor related to all the others involves the effects of poverty on prenatal development. Infants born in poverty are more likely to have birth defects or low birth weights, and they are less likely to survive or to be healthy. Mothers living in poverty are less likely to have adequate nutrition, less able to afford good medical care, more likely to experience physical and emotional stress, and are unlikely to have access to prenatal education programs. In general, factors having negative effects on prenatal development are often magnified in a poverty situation. The community can help by providing resources which reduce the effects of many of these factors.

Birth Processes

Proper care during the stages of the birth process is important to both the mother and the newborn. Hospital procedures for checking the neonate (newborn) immediately after birth depend on many factors. The Apgar test is a common procedure.

Stages of Childbirth

Childbirth involves three stages – *labor*, *delivery*, and *afterbirth*. The first stage, called ***labor***, involves a series of *contractions* of the uterus. They are rhythmical and grow increasingly longer and harder, with shorter intervals between. This stage lasts on the average of 12 to 24 hours for a woman having her first child. Later births usually have shorter periods of labor (8-12 hours). The contractions eventually cause *dilation* (opening) of the *cervix* (the passage between the uterus and the vagina). The last part of labor is called *transition*, when the infant's head moves through the cervix into the *birth canal* (vagina).

The second stage of childbirth is the *delivery*, which only lasts a short time. The pelvic area has been prepared by the pregnancy hormones to be pliable and stretchy, so the infant squeezes through the birth canal. The third stage is the delivery of the *afterbirth*. This includes the placenta and the umbilical cord, the organs which supported the life of the fetus in the uterus. The uterus will continue to contract for several hours in order to stop the bleeding and to begin the process of returning the uterus to its orginal size.

Methods of Delivery

There are several types of delivery. *Prepared* methods use physical and emotional preparation for labor and delivery to ease the discomfort of childbirth. They use muscle relaxation exercises, education to reduce fear, and techniques for redirecting attention during labor so it is not focused on the discomfort. Most of the natural methods stress the involvement of a supportive person, often the father. The *standard* methods use medication and/or *anesthetics* for the pain of a normal, vaginal delivery. *Caesarean sections* involve major surgery. The woman's abdomen and uterus are opened surgically so the baby can be removed without going through the birth canal.

Role of Others in the Birth Process

With the increasing popularity of prepared childbirth, fathers have become an integral part of the childbirth team. This role, sometimes called "coach," encourages the father in his support of the mother, lessens his anxiety, and gives him a meaningful role in the birth process. The family bonds can be strengthened as both parents participate in the birth of their child. Many hospitals now allow a relative or close friend to assume the role of "coach" when the father cannot be there.

Because some parents want other members of the family or close friends present, home births and birthing clinics are becoming more popular. In these settings there are no restrictions on who can be present during delivery, but births should be supervised by a doctor or licensed *midwife*.

Effects of Delivery Methods

Doctors often give some form of medication during delivery to relax the mother, decrease pain, or eliminate sensations completely in the pelvic area. Improper use of such drugs may prolong labor and/or may affect the baby's nervous system since the effects of drugs are passed on to the baby. This can cause *anoxia* or lack of oxygen during labor and *respiratory* or breathing problems at birth. Motor activity and development also might be affected. Finally, neither mother nor baby will be alert after birth in order to take advantage of the special state of quiet alertness that is thought to promote bonding.

However, medication is sometimes necessary. When the mother is extremely stressed for a long period, the baby can also suffer from anoxia. In a long labor, medication might help the infant to receive *more* oxygen. If medication is needed, the parents who wanted an unmedicated birth should not feel as if they have "failed." Proper use of medication by a doctor who understands the parents' and infant's needs may, in some cases, be better than no medication at all.

Other childbirth procedures can affect the infant. For example, *forceps* are tools that may be placed on either side of the baby's head during birth in order to reposition the body for delivery. Forceps may be dangerous due to the pressure put on the skull. However, the baby may be in danger due to its position. Skilled doctors use forceps safely and wisely.

In order to decide whether or not special procedures are needed, doctors may rely on *fetal monitoring*. An external monitor may be attached to the mother's abdomen, or an internal monitor may be attached to the baby's scalp. The vital signs are watched, and if signs of distress appear, decisions about special procedures can be made quickly.

There are many factors to consider when parents decide which procedures they want to follow during and after childbirth. The important thing is to be prepared and to discuss all of these

issues with the doctor *before* labor begins. If the doctor will not discuss these things to the parents' satisfaction, they should consider changing doctors.

Hospital Procedures

Hospital procedures immediately after birth depend on many factors, including the infant's birth weight, any emergency situations for mother or baby, and the policies of the hospital or doctor. The neonate who does not weigh at least 5½ pounds is considered to have low birth weight. This is the most common problem at birth, and it can signal serious consequences. These babies are watched carefully and are given special attention.

In general, hospitals follow some common procedures. First, mucus is cleared from nasal passages, and breathing is established. The umbilical cord is clamped and cut, and external blood and tissue are cleaned up. The Apgar test, given exactly 1 and 5 minutes after birth, evaluates breathing, circulation, pulse, muscle tone, and reflexes. Low *Apgar scores* alert the medical staff to problems needing immediate attention. The Brazelton Neonatal Behavior Assessment Scale is sometimes used to measure the motor and sensory responses of the newborn.

A few procedures may wait until after parents and infant have had a chance to get acquainted, but they are done in the first few hours. Blood is drawn for tests, and silver nitrate is dropped in the neonate's eyes to protect against possible infections picked up during the trip through the birth canal. The newborn is weighed and measured, and prints are made of its hands and feet.

The Neonate

The newborn who emerges from the womb about 266 days after conception is an integrated person. The newborn, or *neonate*, is equipped by genetics and prenatal experiences to interact in special ways with people and objects. However, it needs special help in order to make the transition from life in the womb.

Appearance of the Neonate

Parents of the typical newborn may be suprised at how it looks. The wrinkled skin may have a bluish cast which becomes pink as circulation is established. The body is coated with a greasy white substance called *vernix* and a fine hair known as *lanugo*. The head and the genitals may seem to large for the body. The skull is not completely knitted together and so it has several "soft" spots. After the journey through the birth canal, the head may look "mashed" but the soft skull soon reshapes itself. The face, especially around the eyes, is swollen. With proper nutrition and care, neonates soon lose their "battered" appearance.

Transitions of Body Systems

During the first few weeks after birth, the neonate's systems are still in a state of transition, and they are not fully self-regulating. Parents and medical personnel must help the infant regulate its body systems until the body can function well on its own.

Respiration. The respiratory system is most likely to cause problems. The newborn needs much more oxygen than the fetus, but must rely on itself to get it. The neonate's breathing is slightly irregular. Anoxia, lack of oxygen, is the most common cause of infant death and brain injury. One cause of anoxia in newborns is *apnea*, where the infant "forgets" to breath for short periods of time. Newborns should never be placed in situations where their breathing passages are blocked in any way. There is evidence that the respiratory system develops better when there is enough *tactile* stimulation, or touching.

Temperature. Another problem area for neonates is temperature regulation. Shortly after birth, temperature drops for 4 to 8 hours, then recovers by itself. However, it takes several weeks before newborns can regulate their body temperatures internally like older children. Until then, they generate enough body heat by eating, moving their arms and legs, and crying. Or, they can be kept warm enough by parents. Neonates should be kept covered at least with a light blanket. Most of their body heat is lost through their heads, so covering the head when outside is a good idea. As layers of fat are built up and as the nervous system develops, infants become better able to regulate temperature internally.

Circulation. In the womb, the fetus had a circulatory system independent of the mother's, but the umbilical cord and placenta cleaned the blood. At birth, the neonate's own system starts taking over. The heart rate will range from 120 to 160 beats per minute, heart murmurs will come and go, and blood pressure will not be stable until about two weeks.

Digestion. At birth, the baby has a strong sucking reflex to aid in getting milk, and the gastrointestinal system begins secreting digestive enzymes. The infant's sphincter muscles automatically open when the bowels or bladder are full. Due to the immaturity of the liver, about half of all babies develop *physiological jaundice* a few days after birth, causing the skin and eyeballs to turn yellow. If quickly diagnosed, jaundice is easy for doctors to treat.

Reflexes

Reflexes are behaviors which occur in response to specific stimuli. Certain reflexes present at birth have obvious survival value for the neonate, but several of these drop out after a few months. The *rooting reflex* causes the neonate to turn its head toward an object touching its cheek or palm. When an object touches the lips, the infant responds with the *sucking reflex*.

Both of these reflexes help neonates to start receiving nourishment from parents.

The *grasp reflex*, which lasts 2 to 3 months, causes the infant's hand to close tightly around any object which strokes the palm. The *moro reflex* develops into the *startle reflex* around 6 months of age. When a sudden change in position or environment is perceived, the infant reacts as if it is protecting itself from falling or being struck. The *tonic neck reflex* causes the head to turn away from the direction in which the opposite arm is stretched. The *babinski reflex*, which lasts about 8 months, is a fanning of the toes when the outside sole of the foot is touched. There are some reflex movements like walking, crawling, and swimming that are involuntary at birth but will appear later as voluntary movements.

Other reflexes are present at birth that will also be present throughout life. These include breathing, swallowing, sneezing, coughing, hiccuping, yawning, gagging, vomiting, and eliminating bodily wastes. Crying is also a reflex action in response to discomfort. (However, because tear ducts are not well developed at birth, the newborn may cry for several months without producing any tears). While some control over these will develop, the actions will remain reflexive. It is important to remember that *all* reflexes are just that. They are reflexes, not deliberate actions. The infant reacts automatically to certain stimuli and has no voluntary control over these reflex actions.

Sensory Abilities

The neonate has four categories of sensory abilities which aid survival:

- *Distance sensors* – vision, hearing, smell sensations
- *Surface sensors* – taste, skin sensations (pressure, temperature, touch)
- Deep sensors (*proprioceptor*) – balance, position, movement sensations
- Deep sensors (*organic*) – body state (vital life systems)

While all these senses function at birth, they continue to be "fine tuned" as the infant develops. For example, at the moment of birth, the neonate's eyes distinguishes light and dark. Within hours, the eyes can focus at about 7 inches. The neonate can also follow movements and seems to prefer human faces. By 5 months, an infant's vision is as good as an adult's. The same sort of changes take place with all the senses.

Sensory development cannot occur without both physical maturation and experience. When infants do not have enough sensory experiences, none of their systems mature normally, and they may even die. Assuming they are getting normal care and attention, infants mainly need *appropriate* stimulation. Infants themselves can tell us when they are seeking active stimulation and when they need to be soothed, but adults must be sensitive to their signals.

States of the Newborn

Researchers have identified several physical *states* of the newborn. Being aware of these helps us to respond sensitively to the needs of the newborn. The states often used are:

- *Deep sleep* (full rest, little movement, regular breathing)
- *Irregular sleep* (body movement and irregular breathing)
- *Doze* (stretching, limb and eye movement, regular breathing)
- *Quiet alert* (eyes open and focusing, little motor activity)
- *Waking activity* (eyes open, irregular breathing, much motor activity)
- *Crying* (gross motor activity, unfocused eyes which close when mouth opens, flushed skin, intense breathing)

During the quiet alert state, the infant focuses on interesting stimuli, such as a face or a voice. Except for about one hour right after birth, neonates are in this state for only five minutes at a time on and off during the day. Gradually, this state lengthens. During the state of waking activity, infants may need protection from too much stimuli, since they are unable to regulate what is perceived. One effective method for this is to hold the infant close while moving rhythmically.

The infant may enter the state of crying due to any number of internal or external discomforts such as gas pain or lying in one position too long. Some infants have *colic*, recurring abdominal pains which cause intense crying. Infants cannot always be quieted quickly, and caregivers may need to experiment to see what positions or movements seem to make them more comfortable.

Bonding

Being able to respond sensitively to an infant requires a certain amount of caring. An emotional bond between a caregiver and an infant ensures that the infant will be well cared for. *Bonding* may occur between infant and parents or other regular caregivers of any age and either sex.

Emotional bonds are built through *reciprocal interactions*, or actions between people that cause and are caused by each other. For example, the infant's rooting reflex causes the mother to position the nipple for sucking. The infant responds by sucking. The mother feels good that her caregiving is working and smiles and talks to the baby. The baby finds this interesting and looks back at the parent wide-eyed. Parents and neonates interact in this give and take way, and become attached to each other.

Bonding between parents and infants may occur soon after birth. Many hospitals now give parents and newborns "bonding time" while the infant is in the quiet alert state. However, bonding and mutual attachment can occur without any "special" time or experience. The important thing is that parents want to take care of their infants and that infants allow themselves to be protected by their parents.

There are many physical processes involved in human development from conception through birth. These processes are influenced by environmental and genetic factors. The process of childbirth is a social as well as physical event. This interaction of social and physical processes continues as the neonate becomes established as a viable infant.

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Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 12

LEARNING OBJECTIVE

Describe fetal activities during prenatal life.

DIRECTIONS

1. Arrange an interview with a woman in her third trimester of pregnancy.
2. Arrange for the woman to have a set of the interview questions at least a week before the interview is to be conducted so she can become especially aware of the fetal activity.
3. Use the interview questions below to obtain information concerning fetal activities.
4. Conduct the interview.
5. Answer the questions below.

KEY QUESTIONS

Interview Questions:

Does your baby tend to have periods of activity?

What activity do you notice when you:

- have just eaten a large meal?
- are exercising (walking briskly, swimmming)?
- are very physically tired?
- are well rested?
- have eaten spicy food (Mexican or Italian food)?

Does your baby seem to have a favorite position? If so, describe it.

Would you classify your baby's movement as frequent or occasional?

Please describe as precisely as possible what the baby's movements feel like to you. (hiccups, kicks, turning, stretching, etc.)

Interview Evaluation: (for the student)

What activities did the mother-to-be relate as affecting the movement of the baby?

What kind of prenatal activity is noticed during the third trimester of pregnancy?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 13

LEARNING OBJECTIVE

State ways the father can help during the birth process.

DIRECTIONS

1. Arrange an interview with a father who has had childbirth training and has participated in a childbirth experience.
2. Prepare a list of questions for him from the suggestions included below.
   - What type training did you receive? Describe the training.
   - What was your role in the birth process?
   - Did you experience any problems during your experience?
   - What benefits did you reap from participating in this capacity?
   - Do you recommend this type of experience for others?
3. Conduct the interview.
4. Answer the questions below.

KEY QUESTIONS

What can fathers do during labor and delivery to benefit the birth process?

What are the immediate benefits to the father, mother, and child by having the father present during labor and delivery?

What possible problems might a husband experience during the birth process?

What possible long-term benefits may result from father's participation in the birth process?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 14

LEARNING OBJECTIVE

Examine procedures for newborns in hospitals.

DIRECTIONS

1. Develop a list of questions to ask a health care professional about care of newborns.
   Interview Questions:
   - What procedures are routinely performed in the hospital on newborns?
   - What is the purpose of each procedure?
   - What are some indicators that "special" problems exist?
2. Arrange a visit to a neonatal care unit in a hospital and interview a nurse or doctor.
3. Answer the questions below.

KEY QUESTIONS

What routine procedures are performed in the delivery room of hospitals? State the purpose of each.

Procedures	Purposes

What special procedures are available for newborns with special needs? Describe these procedures.

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 15

LEARNING OBJECTIVE

Describe the appearance of the typical newborn.

DIRECTIONS

1. Visit a hospital to observe newborns (use viewing windows) or examine pictures of newborns.
2. Observe the appearance of the newborns.
3. Answer the questions below.

KEY QUESTIONS

Describe the appearance of a newborn under each heading below.

facial features

limbs

head

body

fingers and toes

hair and skin

color

What different kinds of movements does a newborn make?

In what ways are newborns and older infants different?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 16

LEARNING OBJECTIVE

Describe infant reflexes.

DIRECTIONS

1. Arrange to observe an infant under six months of age.
2. Ask the mother or caregiver to demonstrate the following reflexes: grasp reflexes, swimming reflex, Moro reflex, and Babinski reflex. Describe to her or him how to cause the reflex.
3. Answer the questions below.

KEY QUESTIONS

What reflexes were observed?

What reflexes were not seen?

Explain why some reflexes were not seen.

From course reading, what is a purpose of reflexes? What information about an infant can be obtained from the presence or absence of certain reflexes?

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 17

LEARNING OBJECTIVE

Examine the sensory abilities of the newborn.

DIRECTIONS

1. With permission, conduct some simple experiments with a young infant with the help of the parent or caregiver as follows:

   Experiments:

   a. Using a flashlight, experiment with distance, and movement, to observe visual sensing.
      1. *Distance.* To observe distance, hold the lighted flashlight approximately four feet away from the baby's head and move it slowly toward the child. Observe and record the distance at which the infant appears to become aware of the light.
         Distance _____

      2. *Movement.* To observe movement perception in infants, hold the flashlight at the distance recorded above and slowly move the flashlight to the right and left. Record the child's reactions:
         _____
         _____
         _____

         Next move the flashlight quickly from side to side and observe the child's reactions. Record the observations. _____
         _____
         _____

   b. Make a tape recording of different sounds (e.g., the mother's voice, radio, your voice, the father's voice, musical instruments, toy music box, rattle, doorbell). Use the tape to explore the infant's reactions to sound.
      1. *Loudness/Softness.* Play the tape very softly and observe and record the child's responses. _____
         _____
         _____

         Next play the tape louder and record the child's reactions.
         _____
         _____

         Finally play the tape rather loudly and record the child's responses. _____
         _____
         _____

      2. *Distance.* To observe the child's reactions to sounds at varying distances, play the tape recorder and hold it close to the child's

head. Play it for approximately 1-2 minutes, observing the child's responses. Record the child's responses. _____

_____

_____

Next, move the tape recorder approximately 3 feet away from the child and play for 1-2 minutes. Record observations. _____

_____

_____

Finally, move to approximately 12 feet away from the infant and play it once again, noting responses. _____

_____

_____

c. Hold cotton-tipped swabs dipped in odor-producing substances. Dip the swabs in liquids or other materials having different odors (e.g., pickle juice, applesauce, vinegar, vanilla). List the odor used and then the child's reaction to the odor. Choose five different scents.

1. _____ Reaction _____
2. _____ Reaction _____
3. _____ Reaction _____
4. _____ Reaction _____
5. _____ Reaction _____

d. Experiment with a sense of touch by gathering eight objects which would be cold, warm, rough, soft, heavy, and light. Touch the child on the arm, forehead, abdomen, etc., with each object. Record the reactions.

Object	Area Touched	Reaction
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____

e. Using a small spoon for giving a taste, observe and record the responses of the baby to the following:

sugar water (mix 1/2 t. with 1/2 c. water) - _____

_____

salt water (mix 1/2 t. with 1/2 c. water) - _____

_____

milk - _____

lemon water (mix 1/2 t. with 1/2 c. water) - _____

_____

KEY QUESTIONS

What was learned about a newborn's visual sensing?

What was learned about a newborn's auditory sensing?

What was learned about a newborn's sense of smell?

What was learned about a newborn's sense of touch?

What was learned about a newborn's sense of taste?

Identify the category most easily observed.

List the category most difficult to observe.

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 18

LEARNING OBJECTIVE

Describe newborn states.

DIRECTIONS

1. Visit a hospital nursery viewing area. Observe and record newborn states.
2. Answer the questions below.

KEY QUESTIONS

What states did you observe?

How frequently did an individual infant's state change?

What happened if the infants were in a sleep state when they were picked up for some routine care activity?

How did the staff interaction with the newborns affect their other states?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 19

LEARNING OBJECTIVE

Describe the bonding process between parents and newborns.

DIRECTIONS

1. Arrange an interview with a set of parents.
2. Conduct the interview using the following interview format:
   - When did you first get to hold your baby?
   - Where did you first get to hold your baby?
   - How much time did you have?
   - Who else was there?
   - What did you do with the baby - exactly how did you touch and look?
   - What did the baby do during this time?
   - How did it end? (Example: nurse came to get baby)
3. Answer the questions below.

KEY QUESTIONS

What did the mother do?

What did the father do?

What did the baby do?

What are the key behaviors associated with the bonding process?

What would ideal bonding be like?

SELF-EVALUATION FOR LABORATORY EXPERIENCES

Name of Student: _____ Date: _____

Course Instructor: _____ Course: _____

Lab Experience: _____

Briefly describe the events of your experience.

Answer the following questions.	Yes	No	N/A
1. Did I read the unit overview and assigned readings?	☐	☐	☐
2. Did I read the lab experience carefully before beginning?	☐	☐	☐
3. Did I follow the directions?	☐	☐	☐
4. Did I arrive on time as planned?	☐	☐	☐
5. Were my materials or equipment ready?	☐	☐	☐
6. Did I know the assignment well enough to carry it out without referring to notes?	☐	☐	☐
7. Did I introduce myself to the caregiver and children?	☐	☐	☐
8. Did I achieve the learning objective for the lab experience?	☐	☐	☐
9. Were my personal goals for the experience achieved?	☐	☐	☐

Describe what you feel you accomplished as a result of this experience.

How could you improve your performance?

PARTICIPATION EVALUATION

Name of Student Observed: _____ Date: _____
Course: _____

Name of Instructor Evaluating: _____

Lab Activity: _____

Setting for the Observation: _____

Description of the Student's Performance:

EVALUATION CHECK LIST

General:	Superior	Good	Fair	Poor	N/A
Planning	☐	☐	☐	☐	☐
Age-appropriateness	☐	☐	☐	☐	☐
Preparation of materials	☐	☐	☐	☐	☐
Introduction to the experience	☐	☐	☐	☐	☐
Carrying out the plan	☐	☐	☐	☐	☐
Quality of initiating	☐	☐	☐	☐	☐
Quality of responding	☐	☐	☐	☐	☐
Voice tone	☐	☐	☐	☐	☐
Use of language	☐	☐	☐	☐	☐
Specific*					
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐

COMMENTS

*The instructor will fill in specific behaviors to be observed based on the lab experience. This should be done before the student is observed.

Performance Objectives

Development in Infancy and Toddlerhood Unit IV

Physical Development

- Describe the growth patterns of infants and toddlers.
- Describe development of the nervous system during infancy and toddlerhood.
- Trace infant and toddler motor skill development.
- Examine factors affecting physical development in infancy and toddlerhood.

Intellectual Development

- Trace the development of perception in infancy.
- Describe cognitive development in infants and toddlers.
- Identify conceptions people may have about the understanding and intentions of infants.
- Describe language development in infants and toddlers.

Emotional and Social Development

- Describe emotional development in infants and toddlers.
- Describe social development in infants and toddlers.

Reciprocal Nature of Development

- Examine the interaction among physical, emotional, social, and intellectual development during infancy and toddlerhood.
- Develop an environment that provides appropriate sensory stimulation for infants.
- Propose a plan for successful toilet training.
- Analyze the relationships among play, autonomy, and cognitive development.

Overview

Many of the principles of development discussed in Unit I can be easily observed during infancy and toddlerhood because the changes are so rapid at this age. Physical change still dominates infancy and toddlerhood, but important emotional, social, and intellectual changes are also taking place. These changes allow the child to have increasing control over interactions with social and physical environments. Locomotion, object permanence, symbolic thought, cooperative play, a sense of trust, self-awareness, autonomy, and language are just some abilities being developed during this period. The different theoretical approaches provide ways of understanding what we observe in infants and toddlers.

Physical Development

During infancy and toddlerhood, there are dramatic physical changes taking place. Just as the muscles and skeleton are growing and maturing, the brain and other parts of the nervous system are doing the same. Changes in all these areas allow voluntary motor control to develop. Many factors affect physical development at this time.

Growth Patterns

The growth of skeletal and muscular systems as well as other systems and organs is very rapid during infancy and toddlerhood. At birth, the brain is 20-25% of its adult size, but it grows to about 75% of its adult size by two years. Most newborns are between 17 and 21 inches long, but by their second birthday, toddlers are half their adult height. Normal birthweight is about 6 to 8 pounds, but this doubles by four months and quadruples by two years. The body's systems mature as well as grow. Growth refers only to size, but maturation refers to the ability to function properly. Growth and maturation of the physical systems proceed according to the patterns of development discussed in Unit I.

Nervous System Development

Much of the physical development during infancy and toddlerhood is related to the growth and maturation of the nervous system. The nervous system is an electro-chemical system. Information is relayed from one nerve cell, or *neuron*, to another by electrical currents. Chemicals found at the end of each

neuron can either transmit an electrical impulse to the next neuron, or they can stop the impulse. These chemicals are called *neurotransmitters.*

Brain Structure. Different parts of the brain develop at different rates. At birth, the inner parts of the brain are well developed. The *hindbrain* controls reflexes and critical body functions such as breathing. The *midbrain* acts as a bridge between the brain and the rest of the body. The *cerebellum* and the *forebrain* control motor activity and sensorimotor coordination. The forebrain, or *cerebrum*, is made up of several structures which also control internal organs, body temperature, hormones, emotional responses, and learning. One of these structures is the *cerebral cortex*, the outside cover of the brain. In the cortex, information is processed, associations are made, and learning takes place.

Nervous System Processes. When we interact with the environment, we sense information which is sent to the brain. Electrical impulses enter the spinal cord, travel up through the midbrain, and are sent to proper areas of the cerebral cortex. The cortex gives the brain's last word on how we should react to the information. If we have been hurt, the midbrain's emotional reaction might be to fight, but the cortex can override that impulse to hit someone. In fact, one of the main functions of the cortex is to *inhibit*, or stop, impulsive behavior. Mature humans are able to decide what to do—they do not have to act on their impulses. This control by the cerebral cortex is called *cortical control.*

Cortical Control. Newborns do not have cortical control over their actions partly because the nervous system is not fully developed. All the neurons the child will ever have are present at birth, but they are not complete. First, not all the neurons have developed *myelin*, a fatty substance coating the outside of the nerve. Myelin helps the electrical impulses to flow easily (like insulation on electric cords), and it allows better control over muscle action and other behaviors. Newborns cannot control their necks partly because the nerves to that area do not yet have myelin. Most neurons are fully covered with myelin by age six or seven.

Nerves in the infant's cortex are not connected to each other very well. *Dendrites*, little "fingers" coming off a neuron that reach toward other neurons, continue to be created for the first two years. *Glial cells* are brain cells that nourish the nerve cells. When infants are well nourished and have appropriate stimulation from the environment, more glial cells and dendrites develop, which allow more chances for electrical impulses to travel between nerves. The child will then be able to make more associations, learning will be faster, and voluntary control will be easier.

Implications. These facts about nervous system development imply several things about infants and toddlers. First, we cannot expect young infants to voluntarily control their behavior. As the nervous system matures, cortical control will develop; but for a while at least, caregivers will have to provide that control for the infant. For instance, newborns are not able to tune out anything they can sense, but caregivers can inhibit distressing stimulation for them. (Rocking, holding close, and stroking are good inhibitors.) Or, a young infant does not associate touching fire with being burned. Even after learning this, the infant may not be able to stop from reaching for a flame. The caregiver must literally act as the infant's cortex by keeping the child away from fire until it is mature enough to inhibit its own behavior.

Caregivers who expect infants to have more control than is physically possible may not watch them closely enough. Or, they may try to "make" infants control their behavior by abusive action such as slapping or shaking. (This could cause brain damage because the protective lining around the cortex is not well developed, and the brain bleeds easily for the first two years.) Helping children control their behaviors does not have to mean punishing them. It means controlling for the children what they cannot control and helping them learn to control what they can.

Another implication is that children need an environment that provides appropriate experiences. They do not need expensive toys. They need sensitive people interacting with them who will talk, make faces, touch, and simply play. Hitting a spoon on the table is as effective as shaking a silver rattle. The important thing is that children be able to use all their senses to interact with the environment, and that the objects and people in that environment respond to the actions of the children. This helps the children understand that they have some control over what happens to them.

Finally, facts about the development of the nervous system imply that infants and toddlers need enough calories and the proper nutrients. Healthy development of the nervous system depends on good nutrition and appropriate stimulation. Children who receive these during the first few years will be better equipped to control their interactions with the environment all of their lives.

Motor Development

Gaining voluntary control over physical actions is a major task of infancy and toddlerhood. In motor development, two changes are taking place. First, the brain develops more control over muscle movements, for reasons already discussed. Second, the muscles grow strong enough to move the body parts. Both of these changes depend on experience with the environment as well as physical growth.

Principles of Motor Control. Following the rules of head-to-toe development, an infant will first be able to control head movements, trunk and legs (in that order). Following the rules of near-to-far development, infants master the trunk, then arms and legs, then hands and feet, then fingers and toes. They control global movements before they can make specific, complex motions. These complex movements involve combining several abilities. For example, to pick up a small object, infants must combine *fine motor skills* (such as pinching) with *gross motor skills* (such as moving an arm). The following overview of motor development shows how these skills develop according to developmental principles.

Sequence of Motor Control. The *first three months* of an infant's life are generally devoted to "head" activities. The infant will seek experiences involving vision, hearing, taste, and smell. Movements in response to these stimuli will usually be head actions – turning toward or away. While arms and legs may flail in response to stimulation, these actions are not coordinated or controlled like the head movements are by the end of the first three months.

During the *second three to four months* (4 to 6 or 7 months of age), motor activities begin to include controlled movements of the body's trunk and the arms. During this time, the infant begins to roll over and tries to sit. Arm movements become more integrated with vision, and the infant develops control over reaching. The infant begins to use hands more purposefully but still has only minor finger control.

Motor development from about *six to nine months* is rapid. Sitting and rolling over are mastered. Objects can now be held and manipulated easily. Gaining control over leg movement is important in the development of *locomotion,* or the ability to move around, which begins during this period. *Crawling* is achieved by pulling and pushing the body across the floor with arms and feet. Toward the end of this time, if placed, the infant may try to stand without help from others. Of course, there must be something to hang onto, like a piece of furniture or daddy's leg.

The *last three or four months* of the first year involve greater control over the lower parts of the body and the integration of motor skills already mastered. The infant begins by *creeping* (keeping the trunk clear of the floor), and later, by pulling up from a sitting to a standing position. These milestones are followed by attempts to walk while holding onto something for support. Better grasping skills allow infants to begin trying to feed themselves.

Around the infant's *first birthday*, locomotion skills are refined. The ability to stand without holding on emerges shortly before the first independent steps are taken. Around this time, there is also an important development in fine motor skills. The *pincer*

skills, or the ability to grasp small objects with thumb and forefinger, develops. This skill, along with better locomotion, allows the infant to explore the finer aspects of the environment. Buttons, bugs, and other bits of interest can now be found and closely inspected. (This inspection involves eye-hand coordination and may also be integrated with oral motor skills such as biting, sucking, and swallowing.) Because of these new abilities, caregivers must take even greater care than before to childproof any area where toddlers will be.

By the *middle of the second year* (around 18 months of age), the child's walking ability is usually well established. Crawling up and down steps and climbing provide more places for the curious infant to explore. By this time, the children are becoming skilled at feeding themselves, even with spoons (although forks may still be a problem). These abilities to locomote and to exercise some control over gross and fine motor skills have transformed the infant into a toddler during the first half of the second year.

By *age two*, the end of the second year, the toddler can walk backwards easily and run, due to greater control over feet and toes. While walking up stairs has been mastered, they must still keep their legs apart in a "toddle" in order to maintain balance. Kicking and throwing become common activities, as does scribbling on papers and walls. Mastery of gross and fine motor skills makes the toddler ready to learn some *self-help skills*. These children are able to do simple tasks, but they need close supervision. As toddlers practice their new skills, caregivers must practice patience and a sense of humor.

Between ages *two and three years*, toddlers become able to coordinate their movements well enough to put their clothes on. By three, they are even beginning to dress themselves. These toddlers can stack and balance blocks and they have enough sense of balance that they can jump in place. At three, toddlers can pedal tricycles. Between the age of two and a half and three years, most toddlers gain control over their bladders and bowels. During this time, toddlers' physical control helps them to make the transition to early childhood.

Individual Differences in Motor Development. It must be stressed that the *sequence* of motor skill development is much more important than the rate of development. All children develop at individual rates. These individual differences do *not* mean that some babies are "smarter" than others. There may also be cultural, ethnic, racial, or sex differences in the rate of development. For example, in cultures which stress independence, parents may encourage their infants to walk by themselves earlier. Or, there is evidence that black infants advance more rapidly in motor skills than do white infants. Although rates of motor development may differ among groups, the sequence remains the same. And, unless there are severe environmental or physical factors, the differences will be very slight and will mean little to

the child's overall development.

Factors Affecting Physical Development
Growth and maturation of the physical systems can be affected by many factors early in life. Healthy development depends on touching and other sensory experiences, proper nutrition, and protection from accidents and disease. When an infant or toddler is always inactive, listless, or far behind in the development of motor skills, professional help should be sought.

Immunization. Infants and toddlers are especially vulnerable to disease. While a mother's breast milk provides *immunity*, or protection, from many diseases, this effect does not last long. Many of these diseases are deadly or crippling, and they can be easily prevented by injections or oral immunizations which usually begin at two months of age. Some of the diseases which are preventable are diphtheria, tetanus, red measles, German measles, polio, whooping cough, and mumps.

Safety. Caregivers must allow infants and toddlers to explore the environment, but they must also provide protection for the children. Because children are naturally curious, have poor memories, and have little voluntary control over their impulses, they must be protected from accidents. Other children, pets, and property may need protection from a child's impulsive behavior.

Homes should be child-proofed by removing sharp or breakable objects, guarding heat sources, making sure tables cannot tip over, and keeping drugs and chemicals out of the reach of children. Barriers should be put against places children are not allowed. Caregivers should try to teach children to control themselves, but they must also realize that children this age are not always able to follow rules.

Stimulation. Infants must have enough stimulation in order for the nervous, immune, and hormonal systems of the body to work properly. Infants who have nothing to look at, listen to, touch, or smell simply do not thrive, even when they are properly fed and receive medical care. While early sensory experiences are necessary for healthy development, the stimulation alone is not enough. Children must have *appropriate stimulation* that is responsive to their actions. This sensitive responsiveness is important to physical, emotional, social, and intellectual development.

Nutrition. For the first two years of life, the brain is very vulnerable to poor nutrition. Infants and toddlers need the right balance and amounts of calories, proteins, fats, carbohydrates, vitamins, and minerals. Nutrients found in milk are usually well-balanced. If a mother is eating healthful foods, her breast milk has the closest to "perfect" balance of nutrients. However, anything she ingests, from onions to drugs, will affect the baby through her milk. Although a doctor should be asked, most *formulas* provide the right balance of nutrients and are safe when

stored and prepared as directed. However, no formulas give immunity against disease like mother's breast milk.

Feeding. When fed with bottles, babies should always be held. Bottles should *never* be just propped up into infants' mouths while they are lying in their cribs. This increases chances of choking, bottle-mouth, and ear infections, and it denies them important physical contact. It also amounts to forced feedings since there is no response when the infant indicates a need to stop eating.

Newborns drink a small amount of milk every two hours or so. As they mature, they eat fewer times each day, but they need more at each feeding. Most doctors currently recommend a flexible feeding schedule for newborns. Infants become uncomfortable and fussy when it is time for more nourishment. As their systems mature, they are able to wait for longer periods before the discomfort becomes severe. When feeding is self-regulated at first, it is easier to make it parent-regulated later, since the infant has come to trust that food will not be denied.

Most infants are eating soft cereals and strained foods by the middle of the first year. These should be given with a spoon while the infant is sitting in an upright position. As soon as they are able, infants should be allowed to practice feeding themselves. During the last half of the first year, infants begin to cut teeth, but they cannot chew well until late toddlerhood. So, they should not be given tough, fibrous or stringy foods, or any foods that need to be chewed well. For instance, raw carrots, weiners, and peanuts are leading causes of choking in infants and toddlers.

As growth slows during the second year, toddlers need less food per pound of body weight. An appetite decrease is normal. They should not be forced to eat amounts which may be too much for them. The emotional climate at mealtime is also very important. Feeding problems are more likely to develop later on when food has been forced or denied during the first years.

Intellectual Development

During infancy and early toddlerhood, intellectual development is directly tied to physical development. In fact, the coordination of motor systems and sensory systems *is* intelligence at this time. That is why it is called *sensorimotor intelligence* by Piaget. During this period, learning is related to maturation of the nervous system. Intellectual development involves maturation and experiences which help children adapt to and master demands from the environment. When infants figure out ways to reach, grasp, and move a cloth covering a ball, intelligence is being expressed. Except when the responses are simply reflexes, any response to or action toward the environment shows intelligence.

Perceptual Development

"Knowing" is based on our perceptions of what our senses experience. The perceptual/sensory systems of vision, hearing, touch, taste, and smell are present even before birth. Infants seek certain types of sensory experiences—being more likely to perceive, pay attention to, and respond to movements or human faces and speech sounds. Other perceptions and responses are built on these basic ones. With experience and maturation, the sensory/perceptual systems become better organized and more integrated. For instance, infants start looking for faces when they hear voices.

Cognitive Development

Piaget called infancy and early toddlerhood a period of sensorimotor intelligence because infants know the world only through sensory experience and motor activity. They do not think the way adults or older children think. "Thought" is directly related to interaction with the environment. If infants cannot act upon something, they cannot sense it. If they cannot sense something, they cannot perceive it. If they cannot perceive something, they cannot "know" it. So, for Piaget, thought arises out of motor activity.

Circular Reactions. Piaget suggested several stages in the sensorimotor period. Infants move through these stages as they become better able to plan and reach goals. This gives them more control over their environments. Infants adapt through *circular reactions*, or actions made by accident or by reflex. When these actions are noticed, they are repeated, especially if they are pleasant or interesting. Later, the infant repeats these actions to see what will happen.

For instance, when spilled food makes an interesting splat on the floor, the curious infant may spill more food to see the splat again. Over time, these actions become more goal directed. The infant experiments with the actions to see what happens. Does dropping food with a hand make a different splat than dropping food with a spoon? Finally, when children can experiment with thoughts as well as actions, sensorimotor intelligence changes to *preoperational thought.*

Object Permanence. Besides the development of intentions and goal-directed behavior, there are other cognitive changes during infancy. Young infants do not know that an object exists if they cannot see, feel, hear, smell, or taste it. However, around 8 months, as memory abilities improve, they begin to develop an understanding that objects are permanent (*object permanence*). Hiding games such as peek-a-boo become more fun as infants begin to search for hidden objects. By the end of the sensorimotor period (around two years), the concept of the permanent object is fully developed.

Symbolic Thought. Another important cognitive change during this period is the emergence of *symbolic thought*. This is the

ability to think about something without acting on it at the same time. Symbolic thought emerges as children mature and experience objects, people, and language through play. When toddlers start imitating things which are no longer present (*delayed imitation*), when they pretend one object is something else (*symbolic play*), and when they use symbols to represent ideas (*language*), they have made the transition to the symbolic thought of the preoperational period. They are no longer tied to sensory and motor experiences in order to understand the world.

Implications. The knowledge about cognitive development has several implications for the way adults treat infants and toddlers. First, infants and toddlers do not think in the same ways adults do. While some behaviors of young infants can be conditioned, very few of them are under voluntary control. Voluntary, cortical control over muscles, emotions, etc., develops slowly through maturation and experience.

What would be "selfish, manipulating" behavior in an adult is normal and without malice in an infant. When infants experience physical or emotional discomfort, they naturally cry; crying does not come under voluntary control for some time. While infants do learn to make simple associations, they are not capable of having complex intentions.

Also, because of limits on memory, infants cannot remember rules and instructions from one occasion to the next. Rules for toddlers must be very simple. Young children cannot understand abstract concepts. When caregivers believe infants and toddlers are capable of these kinds of thoughts, they are more likely to abuse the children by trying to make them do things they simply cannot do.

Language Development

Language is both a social and a cognitive skill, and it also involves physical development. At birth, the speech area of the left side of the brain is well developed, making infants biologically "prepared" to hear and respond to human language. Language development includes *receptive* functions (understanding) and *expressive* functions (talking).

Receptive Language Development. Neonates can tell the difference between sounds and are calmed more by human voices than by other sounds. By the third month, infants smile and coo when the voice is gentle and friendly, but they cry and withdraw when the voice is harsh and loud. By the middle of the first year, they are aware of differences in the tone of voice used with questions, statements, and exclamations. Of course, infants at this age still do not know what the various tones of voice mean.

By the end of the first year, infants are aware that words are connected to objects and actions, they can obey very simple

commands ("Come to daddy"), and they can recognize their names and other familiar words. During the next six months, they can obey more complex demands ("Give Granny the bug"). They point to pictures of familiar objects and to parts of their own bodies, and they enjoy hearing simple books read.

Expressive Language Development. Expressive language begins with the *undifferentiated cries* of newborns. In one month, the specific patterns of *differentiated cries* emerge as cries of hunger begin to sound different from cries of pain. Around two months, as their vocal cords mature, infants begin to *coo* producing very simple vowel sounds. By six months, *babbling* appears as they repeat consonants and vowels (bababa, mamama, dadada, etc.). At this stage, infants are stimulated by their own voices, but others also start being more responsive to the sounds. Children who are not spoken to will not progress past this stage. During the last half of the first year, infants begin to imitate words they hear (*echolalia*), but not to communicate meaning.

Around their first birthday, infants begin producing language with the intent to communicate. At first, they use only one or two words to stand for the meaning of a series of words. For instance "Out" may mean " I want to go outside." Or, it may mean "Get out." This is called *telegraphic speech*, since it uses only the essential words needed to convey the idea in a whole sentence. The success of this kind of communication depends on the ability of others to correctly interpret the meaning. In order to do this, adults must be sensitive to the needs of the child.

Like other systems, the language system requires experience in order for the infant to mature correctly. Caregivers must talk to infants and toddlers often, and someone must pay attention when *they* try to communicate. Children who are ignored may develop language disorders as well as emotional and social problems.

Emotional and Social Development

During infancy, the basis is set for emotional reactions and social interactions in the future. As toddlers, these have often become individual patterns of behavior.

Emotional Development

Every infant has a unique genetic code. While this means they will be different physically, it also means they will be different emotionally.

Temperament. Some infants adapt to change easily and others need a lot of routine. Infants may be easily excited or easy-going, active or passive, hard to soothe or easily comforted. These individual temperament patterns can influence the type of care given to the infant.

Reactions. Babies also have emotional reactions that are more temporary. Internal states such as being tired or hungry, and the emotions of caregivers can affect the emotions of the infant. When a caregiver feels stress, the infant feels stress, too. While the child cannot tell caregivers what is being felt, sensitive caregivers will be able to see signs of this in the child's behavior.

Trust. Other emotional developments during these early years also require sensitive responses from caregivers. Infants must develop a sense of *trust* in caregivers. Trust is a basic confidence that the reactions of caregivers as well as physical objects will be consistent and therefore, predictable. Because infants do not perceive themselves to be separate from their caregivers, their emotions are very dependent on how caregivers act toward them.

Autonomy. As children develop the concept that self is separate from others, they develop a sense of *autonomy*, or independence. Caregivers of toddlers must allow them to try out new things. However, toddlers may become shy and clingy at any time, and they need very close supervision since voluntary control over behavior is still very limited. Caregivers encourage autonomy by simple things such as giving infants finger foods so they can successfully feed themselves.

Negativism. The tendancy to say "no" to everything is strong in toddlers. This *negativism* is a normal reaction to their newly found sense of self and autonomy. Sensitive caregivers do not feel threatened by this. They understand that the child is just trying out independence. Some of the negativism can be avoided. Asking, "Do you want to put on your coat?" merely invites a "No." It is better to ask, "Do you want to put on your hat or coat first?" Patience and firmness are watchwords for caregivers during this time.

Fears. Infants and toddlers are fearful of being alone and of being in the dark. These fears are found in the young of many species, and it may be adaptive. Since their natural response is to cry out, parents are less likely to leave them unprotected. The fear of being abandoned by parents (*separation anxiety*) and the fear of strangers (*stranger anxiety*) appear around the middle of the first year.

Finally, toddlers often become very fearful when symbolic thought begins to develop at around age two. Because toddlers cannot tell the difference between fantasy and reality, dreams seem just as real as reality. Children should never be ridiculed or punished for their fears. Instead, caregivers should reassure them of their safety.

Consistency. A sense of security may be the most important factor for healthy emotional development during infancy and toddlerhood. Much of this security is found in *consistency* of caregiving. Caregiving activities need not be rigid, but they do

need to be stable. While there are many different good ways to give care and attention, these may be based on different beliefs about child care and development. The need for stability makes it important for parents to act consistently and to make sure that secondary caregivers also have a philosophy of child care similar to their own.

Social Development

Children are social beings from infancy. They act on the environment and react to it as well. These actions and reactions are the basis for social interaction and communication.

Sensitive Response. Children also need caregivers to respond sensitively to their needs. Again, this gives infants the security needed to establish a basic sense of trust. When caregivers respond in sensitive and appropriate ways, these responses set the foundations for communication. Part of this sensitive responsiveness is providing appropriate experiences for the child. A caregiver who expects a two-month-old to play with a rattle or a four-month-old to play peek-a-boo is likely to be frustrated when the baby does not respond well. It probably frustrates the baby, too.

Perspective Taking. Another example of sensitive response is the tendency for adults and older children to make their speech simpler so the infant or toddler will be more likely to understand. This speech adjustment requires the adult to take the role of the child. In fact, *any* type of sensitive response requires the adult to view the world from the child's perspective. Infants and young children do not have the cognitive abilities to see another person's point of view. The adult must take the child's perspective if there is to be effective communication between them.

Attachment. When someone regularly responds to a child's needs, the child develops an attachment to that person. The development of attachments between infants and caregivers is important. Children who are secure in their attachments are likely to be more curious and willing to explore the environment. One ethological theory states that if a secure attachment is not formed during the first year, the child will never be able to make healthy attachments, even as an adult. The attachment process depends largely upon the ability of the caregiver to perform a mothering role.

It is important to note here that mothering is a *role* function, not a gender trait. Fathers, grandfathers, brothers, uncles, and male friends are all able to mother an infant by providing nurturant care and emotional support. Much less is known about the fathering role, but it seems to involve active playing and teaching. Both mothering and fathering require sensitive responses to the needs of the child.

Discipline. Responding sensitively does not mean allowing infants and toddlers to be undisciplined. As children mature and

become a part of the social world, more limits on behavior must be set. Discipline, however, does not have to mean punishment. It means guiding and teaching children to have self-discipline, once they are capable of voluntary control over the behavior in question. For infants and toddlers, the main purpose of rules is to protect themselves, others, and property from being harmed. They are not able to remember many rules. The rules should be simple, appropriate for the child's developmental level, and consistently kept.

Play. Guidance is needed as toddlers enter the world of *peers*, or age-mates. At first, infants play with adults or alone in *solitary play*. Later, in *parallel play*, they play beside, but not with each other. Peers are treated as objects to be ignored or explored, not as social beings. Toddlers are as likely to bang on other children as they are to bang on a table. (This is why toddlers should *never* be left alone with infants.) In the second year, toddlers may begin to learn to take turns and share in *cooperative play* which will become fully developed in the early childhood years.

Reciprocal Nature of Development

During infancy and toddlerhood, the physical, emotional, social and intellectual aspects of development interact in reciprocal ways.

Appropriate Sensory Experiences

Sensory experiences affect and are affected by all other developmental factors. This unit has stressed the importance of appropriate sensory experiences during the first two years. These are needed for the body's systems to work and develop properly and for intelligence to develop at all. Healthy emotional development also depends on the abilities of caregivers to respond to children's needs with appropriate experiences. Children's emotions may cause caregivers to respond in certain inappropriate ways (such as holding or hitting). When caregivers provide more appropriate sensory stimulation, these positive social interactions help form communication abilities, attachments, etc. These are just some of the ways sensory experiences affect and are affected by the different aspects of development.

Toilet Training

Control over elimination is another example of how developmental factors interact. Bowel control usually develops before bladder control, and control while awake is achieved before control during sleep. Generally, the later toilet training begins, the faster the child learns.

Bowel and bladder control are possible only after the nerves to the lower part of the body have developed well enough to allow voluntary control over the sphincter muscles. This process first begins when children have enough control over their lower bodies to walk well. However, it is not until around age two that they have enough muscle control to really be toilet trained.

Before this time, a caregiver can be "trained" if the child eliminates at fairly regular times.

While cortical control over bowels and bladder is usually achieved by age three, this control is still undependable. Accidents should be expected until about age five. Reasons for loss of control besides physical immaturity are too many liquids, illness, heavy sleeping, stress, emotional upsets, and simply forgetting. Punishments or ridicule only add to the stress and may even make the problem worse. So, we can see how the different aspects of development are reciprocally related to this developmental skill, too.

Cognitive Development, Play, and Autonomy

Reciprocal effects are also found within a single domain such as intellectual development. Two factors affecting this domain are play and autonomy. As children develop cognitive skills such as intentions, object permanence, and symbolic thought, they have more control over their worlds. This gives them more autonomy and provides more opportunities for play. Cognitive skills are increased through play as children learn more about their worlds. This increased sense of mastery also increases autonomy. As autonomy is encouraged, the chances are greater of increasing cognitive skills. So, all factors have reciprocal effects.

Summary

The infant comes into the world well equipped to interact with the environment on many levels. While needing much care and protection, the infant has physical systems which are "prepared" to adapt to the social and physical environment. Many factors influence that adaptation. Changes during infancy and toddlerhood allow the child to begin to explore the world physically and mentally. As the child gains voluntary control over physical systems, many important skills in the other areas develop. These skills will equip the young child to independently interact with the enviornment.

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Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 20

LEARNING OBJECTIVE

Identify the sequence of motor development in infancy and toddlerhood.

DIRECTIONS

1. Observe two infants and two toddlers.
2. List motor behaviors observed for each child.
3. Answer the questions below.

OBSERVATION CHECK SHEET

Motor Behaviors Observed

Infant # 1 (age in months:):

Infant #2 (age in months:):

Toddler #1 (age in months:):

Toddler #2 (age in months:):

KEY QUESTIONS

List the reflexive behaviors observed in each child.

Infant #1:

Infant #2:

Toddler #1:

Toddler #2:

Describe the type of locomotion used by each child.

Infant #1:

Infant #2:

Toddler #1:

Toddler #2:

What motor skills do you expect each child to master next?

Infant #1:

Infant #2:

Toddler #1:

Toddler #2:

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 21

LEARNING OBJECTIVE

Define and illustrate perceptual development in infancy and toddlerhood.

DIRECTIONS

1. Observe a group of infants and toddlers. Watch for specific sensory behaviors. List those you see in categories shown on the chart below.
2. After each observation, suggest what might be learned from each sensory experience.
3. Answer the questions which follow.

OBSERVATION CHART

VISION		HEARING	
Observation	Learning	Observation	Learning
Ex: Eyes follow as caregiver walks across room.	Objects can move.		

SMELL		TASTE	
Observation	Learning	Observation	Learning

Observation

Learning*

KEY QUESTIONS

Define perceptual development.

Identify ways perceptual development can be enhanced.

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 22

LEARNING OBJECTIVE

Explain factors influencing emotional development in infancy and toddlerhood.

DIRECTIONS

1. Observe an infant or a toddler. Using the assessment instrument on the next page as a guide, evaluate the child's temperament. (Read additional readings if needed).
2. Using the same instrument, interview a primary or secondary caregiver about the child's temperament. Develop a set of questions to ask about the adult's emotional response to the child.
3. Answer the questions below.

KEY QUESTIONS

Describe the patterns of temperament you observed.

How were your observations and the caregiver's evaluations similar? How were they different?

What things might account for the differences in the evaluations?

What is your assessment of the child's response to the caregiver? (e.g., Is that person a consistent caregiver?)

TEMPERAMENT SCALE

Check the blank which represents how close you think the child's behavior is to the words listed on either side.

ACTIVE (high energy)	_____	_____	_____	_____	PASSIVE (laid back, low energy)
PREDICTABLE (regular patterns)	_____	_____	_____	_____	UNPREDICTABLE (irregular patterns)
EASILY COMFORTED (responds to comforting)	_____	_____	_____	_____	HARD TO SOOTHE (little response to comforting)
ADAPTABLE (adapts to change easily)	_____	_____	_____	_____	NOT ADAPTIVE (needs a lot of routine)
EASILY EXCITED	_____	_____	_____	_____	EASY GOING
POSITIVE MOOD (smiling, friendly)	_____	_____	_____	_____	NEGATIVE MOOD (crying, fussing)
PERSISTENT (stays with one activity)	_____	_____	_____	_____	SHORT ATTENTION SPAN (gives up easily, distractable)
MILD REACTIONS (positive or negative)	_____	_____	_____	_____	INTENSE REACTIONS (positive or negative)
APPROACHES (likes new things)	_____	_____	_____	_____	WITHDRAWS (does not like new things)

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 23

LEARNING OBJECTIVE

Explain factors influencing social development in infants and toddlers.

DIRECTIONS

1. Observe a group of infants and a group of toddlers.
2. For each group, record three events involving social interaction.
3. Answer the questions below.

OBSERVATIONS

Infant Event 1:

Toddler Event 1:

Infant Event 2:

Toddler Event 2:

Infant Event 3:

Toddler Event 3:

KEY QUESTIONS

Describe how these social interactions promote social development.

How can sensitive or insensitive responses from a caregiver affect social development?

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 24

LEARNING OBJECTIVE

Describe how physical, emotional, social, and intellectual development interact during infancy and toddlerhood.

DIRECTIONS

1. Observe a group of toddlers during meal or snack time.
2. Describe the situation in terms of how each area of development is enhanced.
3. Answer the questions below.

KEY QUESTIONS

How could meal/snack time experiences promote:

physical development

emotional development

social development

intellectual development

Within a mealtime or snack situation, how could experiences in one area of development be related to experiences in another? (For example: Physical autonomy is practiced through using finger foods. How might this experience promote emotional development?)

In what ways could caregivers guide mealtime experiences so that development in all areas is enhanced?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 25

LEARNING OBJECTIVE

Describe an environment that provides appropriate sensory experiences for infants.

DIRECTIONS

1. Arrange to visit a child care facility which cares for infants.
2. Identify ways in which sensory experiences are provided.
3. Answer the questions below.

KEY QUESTIONS

Describe the opportunities for sensory experiences which were present in the physical environment.

Describe the sensory experiences provided by planned activities.

Identify which of these sensory experiences in the environment were appropriate and which were inappropriate. Explain.

Appropriate:

Inappropriate:

In what ways could the physical environment for infants be arranged to provide the most appropriate sensory experiences?

In what ways could the activities for infants be planned to provide the most appropriate sensory experiences?

How can free play help to provide appropriate sensory experiences?

SELF-EVALUATION FOR LABORATORY EXPERIENCES

Name of Student: _____ Date: _____

Course Instructor: _____ Course: _____

Lab Experience: _____

Briefly describe the events of your experience.

Answer the following questions.	Yes	No	N/A
1. Did I read the unit overview and assigned readings?	☐	☐	☐
2. Did I read the lab experience carefully before beginning?	☐	☐	☐
3. Did I follow the directions?	☐	☐	☐
4. Did I arrive on time as planned?	☐	☐	☐
5. Were my materials or equipment ready?	☐	☐	☐
6. Did I know the assignment well enough to carry it out without referring to notes?	☐	☐	☐
7. Did I introduce myself to the caregiver and children?	☐	☐	☐
8. Did I achieve the learning objective for the lab experience?	☐	☐	☐
9. Were my personal goals for the experience achieved?	☐	☐	☐

Describe what you feel you accomplished as a result of this experience.

How could you improve your performance?

PARTICIPATION EVALUATION

Name of Student Observed: _____ Date: _____
Course: _____

Name of Instructor Evaluating: _____

Lab Activity: _____

Setting for the Observation: _____

Description of the Student's Performance:

EVALUATION CHECK LIST

General:	Superior	Good	Fair	Poor	N/A
Planning	☐	☐	☐	☐	☐
Age-appropriateness	☐	☐	☐	☐	☐
Preparation of materials	☐	☐	☐	☐	☐
Introduction to the experience	☐	☐	☐	☐	☐
Carrying out the plan	☐	☐	☐	☐	☐
Quality of initiating	☐	☐	☐	☐	☐
Quality of responding	☐	☐	☐	☐	☐
Voice tone	☐	☐	☐	☐	☐
Use of language	☐	☐	☐	☐	☐
Specific*					
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐

COMMENTS

*The instructor will fill in specific behaviors to be observed based on the lab experience. This should be done before the student is observed.

Performance Objectives

Development in Early Childhood
Unit V

Physical Development

- Describe growth patterns in early childhood.
- Trace motor development in early childhood.
- Examine factors affecting physical development in early childhood.

Emotional and Social Development

- Describe emotional development in early childhood.
- Describe social development in early childhood.

Intellectual Development

- Examine cognitive development in early childhood.
- Trace language development in early childhood.
- Describe moral development in early childhood.

Developmental Interactions

- Analyze the relationships among the developmental factors leading to understanding self and the environment.
- Assess the importance of play to total development in early childhood.
- Explain the effects of group care on young children.

Sometime during the third year, toddlers begin to look less like infants. Toddlers have gained voluntary control over many of their physical functions, and this control now becomes refined. Their thinking becomes more sophisticated, and they begin to learn to share and play with other children. Their language development is rapid during this period, which enables them to be even more socially competent. This period of early childhood, which lasts until age 5 or 6, is a time of learning and integration of skills.

Physical Development

The growth and motor development of the young child undergo many changes. During this period, physical development is influenced by many factors.

Growth Patterns

Between ages three and five, the average child gains ten pounds and grows six inches. The body loses its "pot bellied" look as the trunk grows and makes more room for the internal organs. Growth is also speeded up in the legs. However, general growth slows during this period. Most of the weight gain is due to the growth of muscles. The muscles gain strength as they grow and are used.

Motor Development

As young children grow, they gain control over their muscles. Motor skills are still being developed during this period, especially in the hands and feet. Gross motor skills develop as large muscles mature. Children also become better able to control wrist and finger movements as fine motor skills are practiced. More importantly, fine and gross motor skills become better integrated during these early childhood years.

Three-year-olds can run, jump, hop, walk on tiptoe, and ride a tricycle. They can use large crayons and pencils and use blunt scissors to cut around shapes (not on the line). Most four-year-olds can climb ladders, jungle gyms, and trees. They can cut close to the line with scissors, but usually still need help with a knife to cut meat at meals. Five-year-olds can use a knife and fork or a pencil with *dexterity*, and they can usually walk heel-to-toe, skip rope, and catch balls. Play is very important in

the development of these skills. As children play, they practice, and as they practice, they mature.

Factors Affecting Physical Development

Many factors affect physical development in early childhood. Children at this age may develop long-term problems such as vision or hearing difficulties or allergies. These problems can be detected through regular medical checkups. Short-term problems are also common. For instance, children become more susceptible to *communicable diseases* as they come into close contact with other children. Some diseases can be prevented by immunizations (see Unit I).

Illnesses. Young children often have upset stomachs and colds. Ear infections are common since the Eustachian tubes connecting the ears to the nose and throat are still not fully developed. An ear infection needs attention right away. Children usually recover from these illnesses quickly, when cared for properly. A sudden drop in appetite or activity level are signs of illness. The chances of getting sick can be minimized by proper rest and nutrition.

Rest. Young children are very active and need enough rest. They need 10-12 hours of sleep at night and a nap during the day. Even when children do not sleep during naptime, they benefit from lying down and resting. Children are able to wind down and rest better when they have a set time and a routine at bedtime or naptime which is consistently followed.

Nutrition. During early childhood, nutrition continues to be important to development in all areas. While children this age can eat the same foods as adults, they need 50% more protein per pound of body weight than adults need. Even though they are active, their growth has slowed down, so they may not need as much to eat as we might think. They should not be forced to eat, since they will naturally eat when their bodies need food. Children often need a snack to give them enough energy between meals. These should be healthful foods like fruit, juice, cheese, nuts, sandwiches, or milk. High carbohydrate foods with empty calories, such as candy, fill their stomachs but do not meet their nutritional needs. There is also evidence that in some children, such foods raise activity levels too high at first and then make them sleepy and inattentive.

Accidents. An important factor affecting physical development in early childhood is accidents. Because young children are curious, active, and still have trouble inhibiting actions, they will get hurt. Cuts, scrapes, and burns are common. Caregivers must do their part to control the environment as the preschooler learns to control impulses. When children are preoccupied with play, they often do not remember warnings. Small children simply cannot keep too many things in mind at the same time because of the limits of the nervous system. So, young children must be supervised when playing, and all medicines and other potentially harmful substances must be kept out of reach. Care-

givers must provide safety in the environment for the child, without overprotecting.

Emotional and Social Development

During early childhood, emotional and social changes are important. As children develop the ability to handle their own and others' feelings, they truly become members of the society.

Emotional Development

Caregivers must strike a balance between encouraging the child's curiosity and providing appropriate controls. Providing consistent limits helps children learn how to control their own behavior. Without some appropriate limits, young children become very insecure and anxious.

Fears. The fears of young children can be very intense. Some fears are good, because they help the child survive. Others seem irrational, but to the young child they are very real. By this age, children have had scary experiences and have seen and heard of frightening things enough times to *know* that there are things in the world to be afraid of. They do not know that the world has more limits than their own imaginations. If a monster can be inside their heads, why can't it be under the bed? To the young child who is just mastering symbolic thought, a dream may seem just as real as reality. Children's fears do not go away with ridicule, punishment, logic, or ignoring. Support, encouragement, and modeling fearless behaviors are more likely to help.

Separation Anxiety. One fear often seen in infants and toddlers, separation anxiety, usually disappears in early childhood. As the child develops trust that the parents will return, there is less fear over their leaving. Of course, separation anxiety may return from time to time when the child is undergoing stress or change. Young children are also better able to adapt to new environments and situations than the toddler. However, too much change can cause frustration as well as anxiety. Caregivers can help to control a child's aggression by controlling the amount of frustration a child is faced with at any given time.

Language. One thing that helps young children to handle anxieties is the ability to talk about their feelings. As language develops, aggressive behaviors such as biting, kicking, and hitting often start subsiding. Instead, children are able to use words rather than actions to express their ideas. Caregivers can help children learn to control negative behaviors by giving them words for what they feel. Caregivers can also *model* positive rather than negative behaviors, thus encouraging *prosocial behavior*. For instance, when a young child watches a parent help someone, the child is more likely to help another person later.

Role-Taking. Children this age are better able to consider the needs of self and the needs of others separately. The ability to take the view of another person begins to develop at this time, but egocentrism is still very strong. Role-taking is important to the development of *self-concept*, or system of beliefs about self. We come to know who we are by looking at ourselves through the eyes of others. Sociologist Charles Horton Cooley called this process "The Looking Glass Self." It is based on the idea that "I am what I think you think I am."

Self-Concept. As children begin to be able to take another's view, they see themselves through the eyes of other people. Caregivers, especially parents, are the mirrors on which the earliest self-concept is based. When parents tell children they are stupid or rotten, they will believe it and then be more likely to act stupid or rotten. Likewise, when they are praised, children's self-concepts and behavior are also affected. This tendency to act how others expect us to act is called the *self-fulfilling prophesy*.

Sex-Roles. Sex role behavior is a good example of this process. When parents or other caregivers view boys' and girls' behaviors differently, the children learn to see themselves differently. If caregivers think that boys do not show feelings or that girls are better artists, these ideas are likely to be passed on to the children. "Big boys don't cry" is a statement that tells boys they are not supposed to feel. Praising girls for their artwork, but not for their running gives them the message that girls are supposed to be creative, but not physical. Since adults pass on their beliefs about sex roles to children, it is important for caregivers to be aware of their own sex biases.

Social Development

Many people have acted as if mothers are the only people important to young children. However, other family members also play important roles in development.

Fathers. Fathers and other males who perform the fathering role seem to add an important dimension to development. While they have traditionally been less involved in nurturing activities, many are becoming more involved, especially as more mothers enter work outside the home. However, even when fathers care for infants, they seem to act differently with them than mothers do. For instance, fathers are more playful and physical, and they are more direct about teaching the children things. While mothers tend to treat boys and girls alike, fathers tend to treat them quite differently. This may be important to sex-role development.

Siblings. Other family members are also important to the development of the young child. *Siblings*, or brothers and sisters, play an important role in how children learn to interact with peers. Siblings can also have a big impact on self-concept, and there is evidence that siblings can make a difference in intel-

lectual development. When a child has an older sibling, information about how the world works is passed on to the younger child. When a child *is* an older sibling, there is a chance to teach the younger sibling. Teaching others is a good way to learn something well.

Extended Family. Extended family members such as grandparents, aunts, and uncles can provide additional parenting roles. Not only can they give young children more attention and a wider range of experiences than parents alone, but they provide more mirrors for the child's developing self-concept. This may be very important when one of the primary caregivers is giving the child negative self-images.

Peers. Peers are also an important part of the young child's life. Interaction with peers allows children to learn valuable social skills. It also expands their world so that intellectual development is enhanced. Through role-play with other children, preschoolers begin to understand the world and where they fit in it. During this period, true social interaction with peers begins as they share and take turns.

Play. While toddlers played beside others in parallel play, most of their activities were independent. *Associative play* is now seen as children learn to treat others as people to be considered rather than as objects to be explored and mastered. Prosocial behaviors such as helping, comforting, and giving begin to be observed in early childhood. Cooperative play begins to develop later, when children are able to take turns and truly cooperate with each other.

Intellectual Development

As children mature and interact with the environment through social or physical play, they are learning how the world and the people in it work.

Cognitive Development

Piaget suggested that during this preoperational period, the child is capable of pre-logical thought. Language, delayed imitation, and symbolic play all signal the beginning of preoperations. (Symbolic play means pretending a box is a boat, a cup is a telephone, or another child is the grocer.) These skills show that the child is able to think using symbols to represent things and events. However, these thoughts are still not well organized, and children this age are not able to separate fantasy from reality.

During early childhood, children develop an understanding of *identities*—that something is the same, even though its appearance changes. (Julie continues to be Julie, even when she dresses like a ghost for Halloween.) In a very general way, they also come to understand *functions*, or the basic relationship between two events. (When the switch is flipped, the lights go on.)

The preoperational period of early childhood has some severe limits on thought processes. Neither identities or functions are fully understood at the start of this period. Young children must mature and experience identities and function before they fully understand them. Until then, they may be fearful of familiar things which look different, or they may think that two events are related when in reality they are not.

The child's recall memory is still poor, but improving. However, most young children do not use any strategies for helping them to remember things. So, they may not be able to remember today the rules they knew yesterday. *Irreversibility* keeps young children from understanding that what is done to an object can be undone. They have trouble understanding how things change.

Another limit on thinking is *centration*, or the inability to focus on more than one aspect of a situation at a time. For example, a young child can consider size, shape, or color, but not all at the same time. Classifying objects on the basis of several dimensions is not possible for the preoperational child.

This limitation of centration is related to *egocentrism*, which is an inability to focus on any other viewpoint except one's own. Egocentrism keeps young children from thinking about the world apart from their activity in it. This does not mean that they are selfish, it simply means that they do not understand that things happen which have nothing to do with them. It also means that they have trouble thinking about how someone else would perceive things. Even when they are able to see another's view, they cannot take the other person's perpective and their own viewpoint into account at the same time because of centration.

These thinking skills and limits have several implications. First, because young children have trouble separating fantasies or dreams from reality, they are often accused of lying. They do not lie maliciously, and they should be helped to understand the difference between the fantasy and the reality rather than be punished for telling a lie. Young children cannot consider several things at once, so complex rules or explanations go over their heads. They can understand categories, but not subcategories.

Young children have trouble understanding how and why things change, and they may become frightened when change occurs. Due to their egocentrism, they may believe that their actions or thoughts have caused things such as divorce or death to happen. Only careful, simple explanations can help them begin to understand that they did not cause these and other events.

Young children rarely understand explanations about *processes*, especially if processes are abstract. Children must have abstractions described to them in terms of what they have seen, touched, smelled, heard, or tasted. While children can

think symbolically, these thoughts are still strongly tied to the senses. *Precocious*, or advanced, language development can make caregivers think preschoolers understand more than they really do.

Language Development
Young children love to talk and to listen. They will sit for long periods of time listening to someone read to them, especially if they can look at the pictures and talk back. During these years, the number of words children understand increases dramatically. The same is true of their vocabulary of expressive language, which increases from about 500 to 2500 words.

Grammar is fined-tuned, although it may seem that children are regressing. Earlier, they imitated the form of words they heard, but as they begin to grasp the rules of grammar, they may *overgeneralize* them. For instance, they may start saying, "I wented home" after learning the rule of adding " ed" for past tense. By age six, most children are consistently speaking grammatically correct and more complex sentences. Of course, children who are talked to, read to, and listened to will have more fully developed receptive and expressive language.

Moral Development
During early childhood, children do not consider intentions when judging right and wrong. To them, it all depends on whether or not the offender gets caught. They cannot consider intentions because their egocentrism does not allow them to take the perspective of another person. Their centration does not allow them to consider two aspects of a situation at the same time. Younger children favor more punishment and do not think about the punishment fitting the crime.

Moral judgments develop with age, experience, and practice in seeing things from others' viewpoints. Role playing like the kind which goes on in *dramatic play* helps these skills to develop. Children are also helped by caregiver's pointing out the thoughts and feelings of others along with discussions of why things are acceptable and unacceptable.

Developmental Interactions

During early childhood, interactions between all the aspects of development are easy to see. The development of a concept of self and of others, the development of play, and the development of caregiver-child relations are areas where the interactions between aspects of development can be seen.

Understanding Self and the Environment
Young children develop an understanding of themselves and their relation to the environment. This process involves all aspects of development–physical, emotional, social, and intellectual. Infants do not know where their entity ends and where the environment begins. During the sensorimotor period,

self is not a concept separate from the objects or people in the world. However, with physical maturation and experience, children learn that they are separate beings.

During the preoperational period, children learn what being separate means. As they practice independence, and as they interact with other people, they learn about themselves. Children gradually learn that their goals and intentions are not necessarily those of others. They come to know that others may not think and feel the same way that they do. Through learning about others, children come to understand that they have certain qualities that are unique to themselves. They begin to see themselves as others see them. In this way children develop a system of concepts about self (the self-concept).

Young children also develop certain feelings about this self-concept. Those feelings are called *self-esteem*. These emotions affect the ways in which children continue to interact with the physical and the social worlds. They may feel competent or incompetent about their ability to control social interactions, to master physical skills, or to understand how objects work. Sensitive caregivers can help children to improve their self-concepts and, in turn, their self-esteem by providing experiences in which the children can be successful.

Importance of Play

Play is important to physical, emotional, social, and intellectual development. During early childhood, children play in order to learn about themselves, others, and the world. Play with objects helps them to learn how things work. They begin to learn how one event causes another event to happen. Children begin to experience and think about the laws of nature through play.

Although their play may not be sophisticated, young children can also play with ideas. In pretend play, children get to try out ideas about how things work and what their relationships are. In dramatic play, children can try out their ideas about social relationships. As they take on the roles of others, pretending to be someone else, they come to understand what the world looks like through someone else's eyes. While pretending with other children, there is much negotiating over the behaviors that are appropriate for the roles they are playing. In this way, they learn about their society as well as cooperation.

Through play, children can act out their feelings in safe ways. Children will often speak through puppets, art, and dolls when they do not have the words for their emotions. They may have the words, but they may feel safer when the feelings are expressed through play. Children often work out their aggression and frustration through physical play. Running, jumping, and climbing are great tension-relievers. In addition, physical play helps children develop gross motor skills.

While sensitive caregivers can arrange appropriate play experiences, it is important that they also allow young children time for *free play*. Children need unstructured time for exploring their physical and social worlds. To the young child, exploration *is* play, and play *is* exploration. Those who work with children can prepare environments which allow the child many choices. This type of exploring is important for healthy physical, emotional, social, and intellectual development.

Types of Care

Sensitive caregiving is as important during early childhood as it is during infancy and toddlerhood. Many young children are involved in some kind of child care program because *primary caregivers*, usually parents, are unable to spend all their time with the children. So, *secondary caregivers* become important influences in a child's life. There are several types of secondary care available. Nursery schools, child care centers, professional child care in or out of the child's home, and care by relatives are some alternatives.

Secondary caregiving obviously affects the children, but it is unclear exactly how. Most information comes from short–term studies of child care in high quality centers associated with colleges. Children in these situations seem to develop the same intellectual skills as children at home with parents. Emotionally, there seem to be no differences in the two group's attachments to their mothers. Socially, children in child care centers interact more when in a room with other children than home children do. Child care children show more positive *and* more negative interactions with peers than children cared for at home.

There may be more differences between the two groups when the children do not receive high quality care. In general, children get better care when they are in small groups, regardless of the child-adult ratio. Also, children get better care when their child caregivers have had special courses or training in childcare.

Summary

During early childhood, many important changes are taking place. Physical growth slows, but development continues as motor skills are refined and strength is gained. Controlling their emotions is a major task for children during this period. Children learn what other people expect from them and what they can expect from others. Through social interactions, children come to understand themselves and others. Finally, intellectual development proceeds quickly as language is mastered and thinking becomes more sophisticated. Young children have mastered and learned to integrate many different skills by the time they are ready to start first grade.

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Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 26

LEARNING OBJECTIVE

Examine developmental norms of early childhood.

DIRECTIONS

1. Observe a group of four-year-olds in free play.
2. Select one child for close study.
3. Using the event sampling technique of observation, record the child's behavior for 30 minutes.
4. Weigh and measure the selected child.
5. Answer the questions below.

KEY QUESTIONS

1. Describe the developmental functioning of a young child.

- In the area of physical development:

  age: _____ height: _____

  gender: _____ weight: _____

  motor skills:

- In the area of emotional development:

  with adults:

  with other young children:

- In the area of social development:

  with adults:

  with other young children:

- In the area of cognitive development:

2. Share these observations with at least five other students in your class. What characteristics does the child you observed share with the children other classmates observed?

3. What characteristics does the child you observed have that are unique?

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 27

LEARNING OBJECTIVE

Examine major motor development tasks of early childhood.

DIRECTIONS

1. Observe groups of three, four, and five year olds at play.
2. Using the lists below of examples of fine and large motor skills, look for examples of these skills in each age group.
3. Answer the questions below.

Examples of Large Motor Skills:

- running
- jumping
- throwing
- skipping
- walking
- catching
- climbing

Examples of Fine Motor Skills

- pinching
- writing
- drawing
- cutting
- pasting
- tip-toeing
- grasping

KEY QUESTIONS

Describe the large motor skills that the children are practicing.

three year olds:

four year olds:

five year olds:

Describe the fine motor skills that the children are practicing.

three year olds:

four year olds:

five year olds:

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 28

LEARNING OBJECTIVE

Identify factors which influence physical development in early childhood.

DIRECTIONS

1. Arrange to interview a director of a child care center.
2. Develop a set of questions to find out how the center encourages physical development of preschoolers.
3. Answer the questions below.

KEY QUESTIONS

What immunizations does the center require for young children?

How does the center provide for the good nutrition of young children?

How does the center protect young children from disease?

How does the center support large motor development?

How does the center support small motor development?

Explain why you think the center's plan for influencing physical development is or is not adequate and appropriate.

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 29

LEARNING OBJECTIVE

Identify factors influencing emotional development in early childhood.

DIRECTIONS

1. Observe a group of young children in a child care setting.
2. Describe how the adults interact with the children in ways that influence emotional development.
3. Answer the questions below, citing examples from the observation.

KEY QUESTIONS

How were the children helped to control anger and other strong emotions?

How were the children helped to express feelings in appropriate ways?

What guidance techniques were observed, and which seemed to be the most effective with the children? (e.g., redirecting, modeling, punishment)

How might the guidance techniques used affect the children's self-concept?

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 30

LEARNING OBJECTIVE

Identify factors influencing social development in early childhood.

DIRECTIONS

1. Arrange to observe young children in a child care setting.
2. Observe a group of children in free play and in planned activities.
3. Answer the questions below.

KEY QUESTIONS

Describe the peer relationships observed among young children.

Describe the relationships between the adults and the children.

What examples of prosocial development were observed among the children?

What toys or activities especially encourage positive social development in early childhood?

How can planned activities for young children encourage social development?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 31

LEARNING OBJECTIVE

Identify factors influencing cognitive development in early childhood.

DIRECTIONS

1. Arrange to visit a child care facility.
2. Review a week of the program's lessons or activity plans for three, four, and five year olds.
3. Observe some of these plans being carried out with each age group (at least 30 minutes in each class).
4. Answer the questions below, citing examples from your observations.

KEY QUESTIONS

Describe the activities you observed in each classroom.

three year olds:

four year olds:

five year olds:

What activities were planned specifically to encourage cognitive development in young children?

What activities did you observe that seemed to encourage cognitive development even though that was not their main purpose?

How were toys and equipment used to encourage cognitive development?

Aside from planning and carrying out cognitive activities, how did the adults encourage or foster cognitive development in their classrooms?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 32

LEARNING OBJECTIVE

Identify advances in language development in early childhood.

DIRECTIONS

1. Make arrangements to observe young children in a child care setting.
2. Make tape recordings of a conversation between two or three children and between a child and a child caregiver.
3. Analyze the tape recording.
4. Answer the questions below.

KEY QUESTIONS

What do young children talk about with other young children?

What do young children talk about with adults?

List the words used by the young children which surprised you.

What errors of speech were heard?

How did the adult interact with the child during their conversation?

How can adults encourage language development in young children?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 33

LEARNING OBJECTIVE

Identify factors which contribute to understanding self and environment in early childhood.

DIRECTIONS

1. Plan a short activity which promotes a positive self-concept in young children.
2. Conduct the activity with one or a few young children in a child care center.
3. Answer the questions below.

KEY QUESTIONS

Describe the activity that you planned.

Explain how the activity should promote positive self-concepts.

Describe what the children did and said during the activity.

What did it seem like the children were feeling during the activity?

Discuss how the activity could have been improved in order to further enhance *each* child's self-concept.

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 34

LEARNING OBJECTIVE

State how free play promotes development in early childhood.

DIRECTIONS

1. Review a week of activity or lesson plans for an early childhood program.
2. Analyze the schedules to answer the questions below.

KEY QUESTIONS

How often are opportunities for choice of play planned into the center schedules?

How is play defined in the center?

What other opportunities for play exist in the schedule even though the activities were not specifically planned as free play?

What areas of development are encouraged during play? (Give an example for each area listed.)

What should be the role of adults during free play?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 35

LEARNING OBJECTIVE

Identify how various types of child care affect young children.

DIRECTIONS

1. Interview a mother who cares for her children at home.
2. Interview a child caregiver in a child care facility such as a day care center or a child development laboratory school.
3. Interview a child caregiver in a smaller setting such as a family day care home or private baby sitting situation.
4. Ask each individual the questions below and record their responses on separate sheets of paper.
5. Answer the key questions.

INTERVIEW QUESTIONS:

What advantages do you think there are for children when they are cared for:

1. by mother at home?
2. in a lab school or day care center?
3. in a family day care home or by a private babysitter?

What disdavantages do you think there are for children when care for:

4. by mother at home?
5. in a lab school or day care center?
6. in a family day care home or by a private babysitter?

KEY QUESTIONS:

What do the different types of child care have to offer children?

How do the caregivers differ in their views of what the different types of child care have to offer?

How could parents decide which type of care is best for their child and themselves?

SELF-EVALUATION FOR LABORATORY EXPERIENCES

Name of Student: _____ Date: _____

Course Instructor: _____ Course: _____

Lab Experience: _____

Briefly describe the events of your experience.

Answer the following questions.	Yes	No	N/A
1. Did I read the unit overview and assigned readings?	☐	☐	☐
2. Did I read the lab experience carefully before beginning?	☐	☐	☐
3. Did I follow the directions?	☐	☐	☐
4. Did I arrive on time as planned?	☐	☐	☐
5. Were my materials or equipment ready?	☐	☐	☐
6. Did I know the assignment well enough to carry it out without referring to notes?	☐	☐	☐
7. Did I introduce myself to the caregiver and children?	☐	☐	☐
8. Did I achieve the learning objective for the lab experience?	☐	☐	☐
9. Were my personal goals for the experience achieved?	☐	☐	☐

Describe what you feel you accomplished as a result of this experience.

How could you improve your performance?

PARTICIPATION EVALUATION

Name of Student Observed: _____ Date: _____
Course: _____

Name of Instructor Evaluating: _____

Lab Activity: _____

Setting for the Observation: _____

Description of the Student's Performance:

EVALUATION CHECK LIST

General:	Superior	Good	Fair	Poor	N/A
Planning	☐	☐	☐	☐	☐
Age-appropriateness	☐	☐	☐	☐	☐
Preparation of materials	☐	☐	☐	☐	☐
Introduction to the experience	☐	☐	☐	☐	☐
Carrying out the plan	☐	☐	☐	☐	☐
Quality of initiating	☐	☐	☐	☐	☐
Quality of responding	☐	☐	☐	☐	☐
Voice tone	☐	☐	☐	☐	☐
Use of language	☐	☐	☐	☐	☐
Specific*					
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐

COMMENTS

*The instructor will fill in specific behaviors to be observed based on the lab experience. This should be done before the student is observed.

Performance Objectives

Middle Childhood and Adolescent Development Unit VI

Physical Development

- Describe growth patterns in middle childhood and adolescence.
- Examine factors affecting physical development in middle childhood and adolescence.

Emotional and Social Development

- Describe emotional development in middle childhood and adolescence.
- Describe social development in middle childhood and adolescence.
- Assess the influence of agents of socialization on development during middle childhood and adolescence.
- Propose ways in which adults can help children achieve a sense of achievement and competence during the middle years.
- Propose ways in which adults can help adolescents achieve a sense of identity.

Intellectual Development

- Describe cognitive development in middle childhood.
- Describe cognitive development in adolescence.
- Develop guidelines for using and interpreting standardized tests.
- Describe moral development in middle childhood and adolescence.
- Describe language development in middle childhood and adolescence.

Developmental Issues

- Examine the sexuality issues related to children and adolescents.
- Describe developmental factors related to alcohol and other substance abuse.
- Describe developmental factors related to eating disorders.
- Propose guidelines for recognizing and helping children at risk for suicide.
- Develop a philosophy about participation in sports and other organized activities.

Around the age of six, children undergo some physical and cognitive changes and continue to mature emotionally and socially. The middle childhood years are spent trying to master the basic laws of nature and of society. Schoolage children must learn the general skills needed to function as a member of their society. With puberty, more physical and cognitive changes begin to occur. As children move into adolescence, they use their new skills to integrate old ones. They must find a place for themselves in society and learn the specific skills needed for the roles they have chosen.

Physical Development

During middle childhood and adolescence, children go through many physical changes. These changes transform children into adults.

Growth Patterns

Between ages five and seven, children have a brief growth spurt. At this time, not only do their heights and weights increase, but their brains grow, too. In what is called the *5-to-7 shift*, the growth of most of the myelin in the cerebral cortex is completed. This makes learning and cortical control much easier and more efficient (see Unit IV). There are also some brain changes that allow children to pay closer and longer attention to things. After the growth spurt, there is little or no actual brain *growth* until children are around 11 or 12.

After the growth spurt, schoolage children's height and weight continue to change at about the same rate as they did during early childhood. That is, they grow two to three inches a year, and they continue to gain about five pounds yearly. Both boys and girls follow this pattern, although by late childhood, girls tend to be up to two years ahead of boys their age in physical maturation. During the middle years, children are gaining agility, balance, speed, and power in their motor abilities. Because growth is relatively slow, they maintain coordination and motor control.

The slow but steady growth of childhood is interrupted by the onset of *puberty*, or the time of sexual maturation. At some time predetermined by the genetic code, glands are sig-

naled to begin releasing certain hormones. One of these causes a growth spurt which lasts several years. Height may increase three to six inches per year, and the adolescent grows stronger. Development seems to proceed in a pattern opposite from that of early childhood. The hands and feet may grow larger while the rest of the body remains the same size. This asymmetry of the body plus rapid growth often makes adolescents lose some control of their movements, leaving them feeling awkward and out of place.

Many adolescents also feel uneasy about other changes as their bodies prepare for reproduction. *Primary* and *secondary sexual characteristics* develop, turning the bodies of children into those of adults by the end of puberty. The age at which children reach puberty has been steadily dropping in the U.S. during the last century. For many boys and girls puberty begins before the teens.

Throughout middle childhood, we see more and more variation in the physical development between children. By the time children reach adolescence, there are some extreme individual differences. Many of these differences between children are the result of heredity. The genetic code which is programmed at birth causes adolescents to develop in a predetermined way at puberty. However, there are also many environmental factors affecting growth and physical development of adolescents at this time.

Factors Affecting Physical Development

Many development specialists believe that the lower age at puberty is due to environmental factors such as increased medical care and better nutrition in our society. While good nutrition is possible, many children do not or cannot take advantage of it. Children living in poverty may not have nutritious foods available. School meal programs and welfare programs help this situation, but many of these programs are now available only to the most needy. While general health is at risk when children cannot eat properly, it is also true that learning and motivation are severely affected.

Many children, particularly adolescents, have good nutrition available but do not take advantage of it. Fast foods for a fast society are often eaten on the run, providing calories for quick energy but little nutrition. Humans have a natural sweet tooth which ensures that we eat fruit, an important source of vitamins. However, this natural desire for sweets may get sidetracked to refined sugar, a main ingredient in many snack foods. Too much sugar can cause tooth decay, hyperactivity and other behaviorial problems. Older children will often not eat properly because they are "dieting." Adolescent girls are especially at risk due to poor diets. In extreme cases of anorexia the ratio of body weight to body fat falls below a certain point, the body reacts as if it is starving to death, and reproductive functions like menstruation are stopped.

Children and adolescents in our society are, on the whole, healthy. Accidents are the number one threat to physical well-being of healthy individuals in our society. Pedestrian-car accidents kill more schoolage children than any other accident or disease. Children act impulsively, and do not stop to consider possible dangers, like oncoming cars, in the environment. Accidents are also the leading cause of death in adolescence, with traffic and sports accidents heading the list.

Contact sports can be especially dangerous, regardless of the participant's age. When joints are damaged, it is also possible to damage the ends of the bones, where growth takes place. When this happens during middle childhood, future growth may be hindered.

Suicide is also a leading cause of death during adolescence, and it is on the rise among schoolage children. Alcoholism, drug abuse, smoking, and venereal disease are also widespread problems.

Emotional and Social Development

It is apparent that emotional and social factors affect physical development during the school years. However, it is also clear that physical development has important effects on emotions and social interactions. At this age more than ever, emotional, social, intellectual, and physical factors of development are interrelated. As children get older these relationships become more complex.

Emotional Development

As schoolage children gain more confidence in their physical control as well as their abilities to control social interactions, they incorporate this sense of competence into their self-concepts. They are likely to have higher self-esteem if they feel a sense of mastery over their interactions with their physical and social environments.

During the preteens, physical and cognitive changes cause children to become more preoccupied with, and self-conscious about their bodies. Their self-esteem begins to be affected by the outward signs of maturation. (Frequently maturity seems to come too early or too late.) Because of the wide individual differences in the onset of puberty, children are often not sure if what they are experiencing is normal or not. At the same time hormonal changes cause emotions to be out of control sometimes, creating mood swings that children and parents do not understand.

At age 11 or 12, children can think abstractly, and the first thing they think abstractly about is usually themselves. They begin to know that others have thoughts about their thoughts, and they may go to great lengths to avoid having others know what they are thinking. (This is discussed later under *adolescent egocentrism*.) This leads to an egocentric fear of what others

think of them. Fears of bodily injury and mutilation are also common at this age.

At younger ages, children still in the stages of concrete operations are likely to be afraid of things they hear about but do not understand, like Communists. Unable to think abstractly about what it means to be a Communist, the child may think of a Communist in the same way one would think of an ax-murderer. Many children also worry about nuclear war. In general, female children, dependent children, and insecure children tend to be more fearful.

Social Development

Social development plays an important part in the schoolage child's development. Preschoolers had friendships, but they were usually temporary arrangements, directed by the task at hand. Schoolage children, on the other hand, develop more enduring relationships. They also develop networks of friends. In later childhood, these networks turn into cliques, or crowds.

During grade school, children generally form same-sex groups. These same-sex relationships seem to be important for development of healthy opposite sex relationships in adolescence. Sex roles are becoming established, so that by the end of this period, girls and boys know exactly what is expected of them in those roles. During late middle childhood, boys and girls may pick an older child of the same sex as a role model for gender behavior.

Middle childhood is a time of gaining competence in social situations. This involves learning the rules of society, and gaining a variety of social skills. Learning to interpret the actions of another person and to take their perspective, is an important part of social competence. Mead proposes that in middle childhood, this ability to take the perspective of the other goes hand in hand with learning the rules of society and developing a concept of self.

In the *game stage* of Mead's theory, social rules are learned as children negotiate the rules of the games. Children are also required to hold in mind the positions and expected behaviors of the different players, and they must be able to see their actions in relation to the simultaneous actions of all the other players. This process starts with games with peers, but then children begin applying these social cognitive skills to the community and finally, to the society.

Agents of Socialization

Socialization refers to the process children go through in order to be able to function in a society. They must learn their society's culture. This includes its *social norms*, or standards of behavior, and its *social roles*, which are the behaviors expected from people in social positions (boy, mother, policeman, church member, etc.). *Agents of socialization* are the people

and institutions which transmit this cultural knowlege. They also transmit the values and beliefs that make children want to behave in the expected ways.

While the process of socialization begins at birth and continues in early childhood, it is not until middle childhood that children begin to want to control their behavior because they think it is the right thing to do. Their new cognitive skills allow them to think beyond themselves and their small worlds. They now begin to understand that they are in some way related to a social system, and schoolage children are curious about the nature of that relationship.

So, these agents of socialization are not merely writing social rules on the blank slates of their minds. Children bring themselves to society at the same time these agents bring society to them. This reciprocal process ensures that children learn to be members of society and that societies change in order to meet its members' needs.

The family is considered the primary agent of socialization because parents, siblings, and others in the household are the first people to care for and interact with children. The family also continues to be the group toward whom we have the strongest emotional feelings, and it has a profound effect on our social beliefs and actions throughout our lives. Religious and political beliefs, social class aspirations, attitudes toward education, and other attitudes and values are usually similar for parents and children (regardless of age).

Schools are also important agents of socialization. The stated role of schools is to impart society's knowledge and values to children. Teachers are particularly important, but peers also exert important influence. Peers form a subculture of their own, especially during adolescence. They become the agents of socialization for the peer culture, which may not appear to be similar to the culture of the larger society, but which usually reflects its basic values. Research has shown that teenagers are influenced more by peers on current matters like hairstyle or taste in music. But parents influence children more on matters of long-term concern, such as education, career, and basic moral values.

Church is also a major agent of socialization. Religious beliefs usually support and are supported by the values of the society. For many children, the church provides an important set of rules for living. Another important agent of socialization in our society is the mass media. There is a long-standing debate about the relative merits of television for children. Because children watch television so much, it has a tremendous impact on them. More than likely, television helps chidlren to learn both the positive and negative values and skills of society.

Sense of Competence

Erikson feels the task of middle childhood is to master the

tasks of society. As schoolage children gain more control over their bodies and begin to master their interactions with the environment, they gain a sense of achievement and competence. Or, if they do not feel competent, they will feel a sense of inferiority that may have long-term effects on their self-esteem.

Perhaps one of the main sources of a sense of failure in middle childhood comes from school. Children can easily build feelings of incompetence in one or more academic subjects. The consequences of these feelings can last for a lifetime. Children can also do poorly in the physical activities that are so much a part of childhood. Many adults still feel the pain of always being the last one chosen for a team sport at recess. Finally, children who have trouble with social relationships may feel socially incompetent. Trouble relating to peers during these years often predicts emotional problems later in life.

As children begin to lose self-esteem, they often show signs of stress such as withdrawal, marked change in appetite, moodiness, etc. During these times, adults can help children find things to master that will make them feel competent. This might be done through hobbies, sports, organized groups, or even school subjects that are of interest or importance to them. Often, one thing well done can encourage a child to try other things. The worst thing is to allow the child to continue feeling like a failure at everything.

Adolescent Identity

Erikson believes the major task during adolescence is to form an identity by integrating all the elements from the earlier crises. This identity should also integrate the various roles played. Without this sense of identity, all the social roles we play would lead to role confusion and an inability to perform any role well. This process of achieving identity, then, involves integrating the concepts of self with the roles available in society, and choosing those roles that best fit. This process may be lengthy and somewhat painful, as a balance between self and society is reached.

Intellectual Development

Middle childhood and adolescence are times when children's intellectual functioning changes dramatically. These changes have a great impact on the way children view others and themselves.

Cognitive Development in Middle Childhood

An infant's understanding of the world is tied to what it can directly sense and act upon at the moment. During early childhood, children begin to think about things that they are not directly experiencing, but their understanding is still tied to things that they have experienced. Middle childhood marks the point at which Piaget feels that children can think logically and solve problems through mental, rather than physical operations. However, their thinking is limited to concrete events. Children

still cannot think about abstract, hypothetical situations.

Some of these new *concrete operations* are *classification, conservation*, and *seriation*. Children are able to move beyond simply grouping objects. Now they can begin to understand the relationships between the objects. Of course, it helps if the children can see the objects. Classifying in the mind may still be too abstract for some children in the early school years. Because children can *decenter*, or focus on more than one aspect of a situation, they can now conserve. They know that even though one property (such as shape) of an object changes, other properties (such as weight and volume) stay the same. Finally, they can seriate, or put things into a serial order (like from smallest to largest). These abilities are necessary thinking skills for children to have before they can think logically about numbers, groups of other people, or even themselves.

There are many individual differences in how children apply logic skills. For instance, children's *cognitive styles* are dispositions to think things through in certain ways. *Impulsive thinkers* respond very quickly, but they are often wrong. *Reflective thinkers* respond very slowly, but they are usually right. These and other individual differences affect how well children do in certain types of classrooms and on certain kinds of tests.

Cognitive Development in Adolescence

Cognitive abilities undergo another major change around the time of puberty. The entrance into *formal operations* is accompanied by another growth spurt of the brain, along with increased brain activity. (The periods of rapid growth happen between 10 and 12 years and then again between 14 and 16 years.) At around 11 or 12 years, children begin to be able to think in abstract terms. They can make hypotheses about all the possible solutions to a problem, and then they know how to systematically test each solution until the right one is found. Unlike concrete thinkers who are tied to thinking about things that *could* be, formal thinkers can imagine all the things that *might* be.

These abilities present some problems to the inexperienced philosophers. During early adolescence, Elkind proposes that children go through what he calls *adolescent egocentrism*. This is the tendency to be preoccupied with one's own thoughts. Because adolescents can think about their own thinking, they assume everyone else must be doing the same. This leads to building the *imaginary audience*, a group of people adolescents are sure follow them around just to watch their every move. This causes a high level of self-consciousness and conformity to fads of dress, hairstyle, etc.

The *personal fable* is an adolescent belief that they are thinking and feeling what no one else could have ever thought or felt before. It is also a feeling of indestructibility, or the "it won't happen to me" syndrome. Happily for everyone, adolescent

egocentrism usually begins to go away as they have more experience with talking to others about their feelings. They find out that they are not unique after all, and that perhaps there are a few people who have other things to do besides watch them.

Standardized Testing

Much of the evaluation of intelligence in our society is done through standardized testing in the public schools. The best known of these are the IQ, or *intelligence quotient*, tests, which measure ratio of mental age to chronological age. These tests screen for children who are unlikely to do well in school. However, there are other areas of intellectual functioning which are not measured by IQ tests.

Many people feel these tests have cultural, language, and social class biases. That is, minority groups would naturally be at a disadvantage when taking these tests. When they are used to classify children so they can be grouped according to abilities, this would be a definite problem.

However, there are more general problems, too. Many times IQ tests are given in group settings and are often timed tests. When interpreting the results, do the testers take into account if a child does not feel well that day, or if a child is a reflective learner or otherwise has problems with timed tests? Even under the best of conditions, test results are often misinterpreted and wrongly used by educators who find it easier to pigeonhole students than to spend the time to find out their true abilities.

Moral Development

In many cultures and religions age seven is considered to be the *age of accountability*, or the age at which children should be able to know the difference between right and wrong. Since they are also expected to be able to inhibit their impulses they are now held accountable for their actions. By this age, most children have gone through the 5-to-7 shift in brain development and have entered the stage of concrete operations. This allows them to understand the rules of society as well as the rules of games.

Kohlberg has proposed three levels in the development of moral thought which depend on Piaget's levels of thought preoperational, concrete operations, and formal operations. In Kohlberg's first level, *preconventional moral thought*, preoperational children judge acts as right or wrong on the basis of whether or not someone is punished for it. Intentions of the actor are not considered.

In Kohlberg's second level, *conventional moral thought*, concrete operational children judge acts on the basis of whether or not they meet the society's moral criteria. Intentions are now considered as the other person's viewpoint can be seen. In the third level, *principled moral thought*, social rules are seen as subjective–there are higher order principles behind them. The

formal operational child who can think abstractly understands that rules are not absolute, but relative.

While level of moral thought does not seem to be closely related to moral behavior, there does seem to be a relationship between moral behavior and role-taking ability. Selman's stages of role taking have been used to study children in trouble with the law. After training in role taking, children are less likely to take things that do not belong to them or to hurt others.

Language Development

After age five or six, children can speak and understand language as it is used by the average adult. They have already begun to learn the irregular verbs which they "overregulated" earlier. This process takes several years, though. During the school years, there are some systematic problems that children continue to have. For instance, passive sentences such as "Books are read by students" are rarely used by children and are often misunderstood during middle childhood. They may also have some problems with the correct use of pronouns, such as when to use "I" and when to use "me." Adolescents rarely have problems speaking or understanding correctly. Overall, their vocabularies are larger, and their sentences are longer and more complex than those of schoolage children.

During the middle years, the most important language task involves learning to read and write. Much of the time in school is devoted to these activities. Children who keep having problems with reading may need special help. *Myopia*, or nearsightedness, can be easily corrected. With professional help, children can even learn to compensate for *dyslexia*, which is an inability to perceive written symbols correctly. Children may need to learn phonics if they have not already done so. Others may simply need some extra practice at home or after school in a non-threatening situation where they can read about things which interest them.

Some adolescents continue to have reading problems. However, writing seems to be a problem for more of them. They often do not seem to grasp the notion that the written word is merely speech in a different form, and its purpose is communication. For instance, grammatical symbols tell other people what they would be doing if they were talking. (When speaking, the end of a sentence is symbolized by a pause and often a drop in tone of voice; when writing, the end of a sentence is symbolized by a period.) Problems with reading and writing have reached epidemic proportions in the U.S. Many high school graduates are *functionally illiterate*. That is, they cannot read and write well enough to function fully in a society which depends on the written word.

Developmental Issues

Functional illiteracy is only one of the issues facing young people in our society. Other issues include sexuality, alcohol and

substance abuse, eating patterns and disorders, suicide, and participation in organized activites. At one time, it was thought that these were problems of adolescence. Now we know that these are real issues for many children in their middle years.

Sexuality

There are two kinds of sexual involvement–voluntary and involuntary. Premature sexual involvement among adolescents is usually a choice, even though often a bad one. However, sexual abuse and rape are different kinds of issues that have very little to do with sexuality. These are acts of violence, not passion. Children who have experienced violent sexual acts need special help to overcome the trauma of such violation. Victims also need medical attention in case *venereal disease* was transmitted, and females need attention if pregnancy has occurred.

Sexual abuse may be happening if a child suddenly starts acting secretive and afraid of going places he/she was not afraid of before, if a child acts frightened or begs not to be left alone with a certain person, or if the child has nightmares and trouble sleeping. Sexual abuse often occurs with a family member or friend; and it is an act of violence that can happen to boys as well as girls.

Voluntary sexual involvement among children is an emotionally charged issue. There are many who believe children and adolescents are not capable of making an informed choice. This may or may not be true. The fact is that early sexual involvement is occurring in record proportions in our society. The effects for both boys and girls are not really known. Especially with young children, there may be major problems with self-esteem. Girls may feel they have to become sexually involved in order to be liked by boys. Boys may feel they are expected to be sexually involved or be thought "unmanly." Rarely do chidlren or adolescents discuss the implications of sexual involvement beforehand.

When sexual involvement is "unplanned," there may be unplanned consequences, too. Venereal disease is one consequence. Some of these diseases such as syphilis and gonorrhea can be cured, but others such as herpes cannot. Another possible consequence is, of course, pregnancy. Pregnancy in an immature body is dangerous for both mother and baby, but the emotional and social consequences are equally difficult. This is true for the father of the baby too. If early sexual involvement continues to take place, precautions of some kind against pregnancy and VD should be made available.

Alcohol and Substance Abuse

There is a difference between substance use and abuse. For example, there are a great many adults who drink socially. They may have a drink or two occasionally, but they do not get drunk. Rarely do children or adolescents drink socially. Most of them, even during late adolescence, drink in order

to get high. This is known as alcohol abuse. This same pattern is seen in the abuse of other chemicals.

There is also a difference between abuse and addiction. Many children who abuse a substance may not be physically addicted to it. However, they may develop a strong psychological dependence on it as a way to cope with everyday stress. In either case, the abuser usually needs help in order to stop. Learning other ways to cope with stress is a necessary step in that process. There are many kinds of treatments available now. Requiring medical treatment may seem extreme, but the consequences of abuse are even more extreme.

Eating Patterns and Disorders

Eating disorders are also a problem for many children. Some nutritional problems have been discussed under the section on physical development. However, there have been such increases in eating problems, particularly among adolescents, that they warrant separate attention. Many adolescents suffer from varying degrees of *malnutrition* or lack of nourishment. This is not the same as starvation, and it can happen even when the child is *obese* or overweight from eating a steady diet of junk foods.

Starvation can even become a problem for children whose families have plenty of money. The obsession with thinness, as portrayed in fashion magazines and on TV, has caused many adolescent girls and some boys to adopt bizzare eating habits. *Anorexia*, or self-starvation, may start with a simple desire to lose weight but often ends in death. *Bulimia* involves severe binge eating often followed by purging through vomiting or laxatives. Death can result from this disorder, too.

Distorted body images and unrealistic expectations about what most human bodies look like can cause children to develop eating disorders. Also, obesity, anorexia, and bulimia have some physiological as well as psychological and social causes. All three are dangerous to the physical and mental health of children and adolescents, and treatment should be received for all aspects of the problem.

Suicide

As children are pressured to perform and conform to often unrealistic parent and peer standards, they begin to internalize these expectations and feel like failures when they cannot live up to their own expectations. In our society, over 50,000 children a year attempt suicide, and 5,000 more succeed. Most of them do not really want to die, they just want to stop hurting. It is painful when children cannot live up to our own or others' expectations.

Children often do not have the personal resources to cope with stress that adults have. Extra attention and perhaps professional help should be given when children are undergoing abnormal

stress or when the danger signals of suicide appear. These include any of the following: drastic changes in sleeping or eating patterns, moodiness, withdrawal from friends and family, and an obsession with death. People who commit suicide usually try to tell someone beforehand; unfortunately many times no one is there to listen.

Organized Activities

Organized activities such as sports, music lessons, and scouts have some positive and some negative aspects. They do provide things for the child to do, and the activities usually provide ways for them to feel competent. Mastering activities is important for the child's self-esteem. The problems come when there is no successful mastery of the activity. Children may then begin to feel incompetent and inferior. "Over-organized" children may be involved in so many activities that they cannot do well in any of them. This, too, can feed inferiority feelings.

Another disadvantage for over-organized children is that they may not have the chance to play games where they get to negotiate the rules. This negotiation is a very important part of the socialization process. Schoolage children can spend hours deciding what the rules of a game will be (e.g., "It's not a tag if you just touch my sleeve.") When the rules are always decided *for* them, they tend to see rules and laws as absolutes rather than as agreements between people. They also may not learn skills of compromise, which is a necessary experience for the development of cognitive skills and resolution of identity crisis, as well as an essential for a democratic society and a nuclear world.

Summary

Infancy and toddlerhood were devoted to gaining voluntary control over the body. Preschoolers refined this and began to control their emotions and social interactions. During middle childhood, bodily control is mastered, social and emotional control is refined, and society's rules and tasks begin to be mastered as children learn to control their thinking.

In adolescence, bodily control must be reestablished, and cognitive changes allow logical, abstract thinking to be used. Physical and cognitive changes that affect emotions may make emotional situations harder to handle during early adolescence. Later adolescence is devoted to mastery of emotions and social interactions and to understanding what is necessary to know in the social roles that young people have chosen to fill.

By the time children move into adulthood, these physical, emotional, social, and cognitive controls have usually developed enough for them to become fully functioning, productive members of a society. From infants who could not even control their own body movements, they have developed into adults who can reproduce and guide their own young through the process of development.

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Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 36

LEARNING OBJECTIVE

Evaluate attitudes of adolescents toward sex.

DIRECTIONS

1. Arrange through proper authorities to administer the accompaning questionnaire to a group of adolescents. (Note: Adolescent groups could be a church youth group, a classroom, etc.).
2. Determine the number of members in the group and prepare an equal number of copies.
3. Administer the questionnaire stressing that it will be kept strictly anonymous. (Tell them *not* to put their names on the questionnaire, and assure them that you will not show or tell anyone about any individual's answers. Reports will be in *group* terms only.)
4. Interpret the questionnaire by answering the following questions.

KEY QUESTIONS

Do most adolescents in this group discuss sex with their parents? What could be done to encourage more discussion?

What role do these adolescents assign to the boy?

What role do these adolescents assign to the girl?

According to this group what consequences result from having sex?

What general conclusions can you draw from the questionnaire concerning adolescent attitudes toward sex?

QUESTIONNAIRE

DIRECTIONS
Please check the blank closest to your view.

1 - Always 3 - Never
2 - Sometimes 4 - Undecided

Do you discuss sex with you parents?

1	2	3	4

Do you discuss sex with your friends?

1	2	3	4

Are you embarrassed to talk about sex?

1	2	3	4

Will you know what true love is?

1	2	3	4

Is it okay to have sex if you love someone?

1	2	3	4

Should you be married to have sex with someone?

1	2	3	4

Should a boy get angry if a girl says no?

1	2	3	4

Do you have to have sex to show you love someone?

1	2	3	4

Is it okay to have sex if you use birth control?

1	2	3	4

Is it okay to have sex if you're planning to get married?

1	2	3	4

Does sex create problems for a relationship?

1	2	3	4

Should the girl be the one to say no or yes?

1	2	3	4

Should the boy be the one to say no or yes?

1	2	3	4

If you have sex with someone, do you have to marry that person?

1	2	3	4

Should you really get to know someone well before having sex?

1	2	3	4

I am a boy _____
(Check one)
girl _____

I am _____ years old. (Fill in)

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 37

LEARNING OBJECTIVE

Work with a schoolage child to help the child develop a positive self-concept.

DIRECTIONS

1. Obtain parental permission and arrange to work with a schoolage child in an after school program. (Ask the child caregiver to identify a particular child.)
2. Observe the child in order to determine the best way of working with the child.
3. Write a plan for helping this child find some area in which to excel. Be sure to base your plan on a specific goal for the child's behavior.
4. Plan to assist the child caregiver for at least 1 hour each day. Try to come at the same time for about three days in a row. During that time be aware of the identified child and implement your plan.
5. Answer the qustions below.

KEY QUESTIONS

What did you learn about this child during the initial observation?

What plan did you make for working with this child?

How did you discover the child's ability area?

How did the child respond to you?

Briefly describe what you did each day and how the child responded.

FIRST DAY
Activity:

Child's Response:

SECOND DAY
Activity:

Child's Response:

THIRD DAY
Activity:

Child's Response:

What evidence do you have that the child had a sense of achievement?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 38

LEARNING OBJECTIVE

Identify stages of moral development in middle childhood and adolescence.

DIRECTIONS

1. Interview a small group of children or adolescents using the story provided in Handout 29. Have each person answer the questions. Avoid coming to a group agreement before all persons have expressed their opinion.
2. Answer the questions below.

KEY QUESTIONS

What are the ages and grades of the children/adolescents interviewed?

Using Kohlberg's stages of moral development provided as Transparency 24, at what stage is each person's first opinion? Did the group decide on an answer that is different from some individual answers? If so, how?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 39

LEARNING OBJECTIVE

Compare the language development of a schoolage child and an adolescent.

DIRECTIONS:

1. Observe and record the language of a schoolage child and an adolescent. Use a tape recorder or you may take notes on what is happening.
2. The observation can be made at any place frequented by children or adolescents (e.g., theater, shopping mall, an after-school hangout, school).
3. Record at least 15 minutes of dialogue and make notes concerning the atmosphere in which the conversation occurs (e.g. location, circumstances, other participants).
4. Make comparisons of the speech by answering the questions below.

Middle Childhood Language Observation

Adolescent Language Observation

KEY QUESTIONS

How was the language usage the same in terms of vocabulary?

length of words

sentence structure

sentence length

use of pronouns

How was the language usage different in terms of vocabulary?

length of words

sentence structure

sentence length

use of pronouns

What were the approximate ages of the participants? (list approximate age for each participant in each age group)

middle-childhood

adolescent

What was the sex of each participant? (record number of males and females in each age group)

middle-childhood

adolescent

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 40

LEARNING OBJECTIVE

Investigate factors which influence alcohol and substance abuse.

DIRECTIONS

1. Make arrangments to interview a professional who works in an alcohol and substance abuse program.
2. Prepare a list of questions to ask about factors influencing alcohol and substance abuse, individual characteristics of abusers, frequency of use and abuse among schoolage children and adolescents, and programs available which influence alcohol and substance abuse recovery.
3. Answer the questions below.

KEY QUESTIONS

What societal factors influence alcohol and substance abuse, and how?

What is the frequency of use and abuse of alcohol and other substances by schoolage children? by adolescents?

What family factors influence alcohol and substance abuse, and how?

What individual characteristics influence alcohol and substance abuse, and how?

What program factors influence alcohol and substance abuse recovery?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 41

LEARNING OBJECTIVE

Analyze factors which influence eating disorders.

DIRECTIONS

1. Arrange to interview a professional who helps persons with eating disorders.
2. Complile a list of questions about the effects society has on people with eating disorders, the characteristics of the individual and the family which might influence eating disorders, and the types and major symptoms of each eating disorder.
3. Using the information obtained prepare a presentation for the class on factors which influence eating disorders.

KEY QUESTIONS

What are some characteristics of the family which influence eating disorders?

What are some characteristics of the individual which influence eating disorders?

What are some societal characteristics which influence eating disorders?

What are the eating disorders and what is the major symptom of each?

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 42

LEARNING OBJECTIVE

State guidelines for recognizing and helping children at risk for suicide.

DIRECTIONS

1. Make an appointment to interview an individual involved with a suicide prevention program.
2. Prepare to stay with the individual during a working shift, listen to a recording of a shift, and prepare a log of events that occur during the shift. (Note: if you are not able to take part in a working shift, prepare a set of questions for the counselor which will help you answer the set of questions below.)

KEY QUESTIONS

What are the warning signals for suicide?

What are good responses to each warning signal?

What services are available for suicide crisis intervention?

How can childhood/adolescent suicide by prevented?

Student's Name: _____ Date: _____
Course: _____

LAB EXPERIENCE 43

LEARNING OBJECTIVE

Survey advantages and disadvantages of participating in sports and other organized activities.

DIRECTIONS

1. Arrange an interview with 3 coaches of some organized sports (soccer, baseball, etc.).
2. Conduct the interview using the following interview format:
   a. What sports are appropriate for middle childhood?
   b. What sports are appropriate for adolescents?
   c. What are the advantages of participating in organized sports?
   d. What are the disadvantages of participating in organized sports?
   e. What are the advantages of participating in unorganized sports (i.e., sandlot ball)?
   f. What are the disadvantages of participating in unorganized sports?

KEY QUESTIONS

What sports do coaches think appropirate for:

middle childhood adolescence

What are some advantages and disadvantages of participating in sports?

advantages disadvantages

What are some advantages and disadvantages of participating in unorganized sports?

advantages disadvantages

Do you think the coaches were biased toward organized sports? Explain.

What are some advantages and disadvantages of organized activities, in general? (such as dance groups, scouts, arts and crafts classes, pep squads, etc.)

advantages disadvantages

Student's Name: _____ Date: _____

Course: _____

LAB EXPERIENCE 44

LEARNING OBJECTIVE

Summarize the physical, emotional, social, and intellectual development of the schoolage child.

DIRECTIONS

1. Review information about the middle childhood years and find the major characteristics of a schoolage child.
2. Devise a set of 20 questions which are equally representative of the material covered.
3. Using these questions, interview a schoolage child and record the responses.
4. Answer the questions below.

KEY QUESTIONS

Explain why you think the child you interviewed is or is not "typical" of the middle childhood years in the following domains:

- Physical

- Emotional

- Social

- Intellectual

SELF-EVALUATION FOR LABORATORY EXPERIENCES

Name of Student: _____ Date: _____

Course Instructor: _____ Course: _____

Lab Experience: _____

Briefly describe the events of your experience.

Answer the following questions.	Yes	No	N/A
1. Did I read the unit overview and assigned readings?	☐	☐	☐
2. Did I read the lab experience carefully before beginning?	☐	☐	☐
3. Did I follow the directions?	☐	☐	☐
4. Did I arrive on time as planned?	☐	☐	☐
5. Were my materials or equipment ready?	☐	☐	☐
6. Did I know the assignment well enough to carry it out without referring to notes?	☐	☐	☐
7. Did I introduce myself to the caregiver and children?	☐	☐	☐
8. Did I achieve the learning objective for the lab experience?	☐	☐	☐
9. Were my personal goals for the experience achieved?	☐	☐	☐

Describe what you feel you accomplished as a result of this experience.

How could you improve your performance?

PARTICIPATION EVALUATION

Name of Student Observed: _____ Date: _____
Course: _____

Name of Instructor Evaluating: _____

Lab Activity: _____

Setting for the Observation: _____

Description of the Student's Performance:

EVALUATION CHECK LIST

General:	Superior	Good	Fair	Poor	N/A
Planning	☐	☐	☐	☐	☐
Age-appropriateness	☐	☐	☐	☐	☐
Preparation of materials	☐	☐	☐	☐	☐
Introduction to the experience	☐	☐	☐	☐	☐
Carrying out the plan	☐	☐	☐	☐	☐
Quality of initiating	☐	☐	☐	☐	☐
Quality of responding	☐	☐	☐	☐	☐
Voice tone	☐	☐	☐	☐	☐
Use of language	☐	☐	☐	☐	☐
Specific*					
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐
_____	☐	☐	☐	☐	☐

COMMENTS

*The instructor will fill in specific behaviors to be observed based on the lab experience. This should be done before the student is observed.

Glossary

accommodation
Changing an existing concept in order to make sense of new information; changing a behavior to incorporate a new one. (These concepts and behaviors are called schemes.)

adaptive
Characteristics which help people adapt more easily to the environment, thus increasing chances for survival.

adolescent egocentrism
A preoccupation with one's own thoughts; it leads to the construction of an imaginary audience and a personal fable.

afterbirth
The expelling of the placenta, umbilical cord, and other fetal membranes from the uterus after childbirth.

agents of socialization
People and institutions which transmit a society's culture (norms, values, and beliefs) to its members.

age of accountability
The age in many cultures and religions at which children are held accountable for their actions—usually around 7.

aminiocentesis
A test of the amniotic fluid which determines genetic problems in an unborn fetus. (Usually done at 16 weeks)

amniotic sac
The sac in the uterus which contains the fetus and the fluid in which it floats.

anecdotal record
Observing and recording a single event which has taken place.

anesthetic
A chemical which causes a person to be unconscious or unable to feel pain.

anorexia
Self-starvation.

anoxia
A harmful lack of oxygen.

Apgar score
A rating of infant heart rate, breathing, muscle tone, reflex response, and color which is taken exactly 1 minute and 5 minutes after birth. It indicates when the neonate needs special medical attention.

apnea
A condition where breathing stops for short periods of time.

appropriate stimulation
Stimulation which is responsive to the needs of the child; it may mean providing or inhibiting stimulation.

assimilation
Adding new concepts or behaviors to the schemes (thoughts and behaviors) which already exist in the child.

autonomy
Independence; the ability to act as a separate person.

babbling
Repetition of vowels and consonants for the pleasure of making sounds.

Babinski reflex
An involuntary spreading and fanning of the toes in response to stimulation to the sole of the foot. It is often used to check for neurological problems.

behavior modification
Changing behavior by planning reinforcements. (Using operant conditioning.)

biological agents
Biological environmental factors, such as viruses, which can affect the newborn.

birth canal
The vagina; the passageway from the uterus to the external genital opening in females.

birth defect
A physical abnormality present at birth which may be due to genetic or environmental influences.

blastocyst
The term used for the cluster of cells which develop after conception but before implantation in the uterus.

bonding
An emotional tie which a parent feels for an infant.

bulimia
Severe binge-eating; often followed by a purge from vomiting or laxatives.

Caesarean section
A method of childbirth where the baby is removed from the uterus by surgery through the mother's abdomen.

caregiver
A person who gives care to a child. It may be a parent, sibling, grandparent, teacher, or other professional child caregiver. A primary caregiver is one who has the main responsibility for the child's care—usually the parents or guardian. A secondary caregiver is authorized by the primary caregiver to care for the child temporarily.

carrier
A person who carries a recessive gene for a given trait.

centration
The inability to consider more than one aspect of a situation at a time. When an object has more than one characteristic, (a long yellow pencil), the child's attention centers only on the most obvious feature, such as color.

cephalocaudal development
Head-to-toe development. The principle that development proceeds from head to toe.

cerebellum
The part of the brain toward the back of the skull which controls motor activity and sensorimotor coordination.

cerebral cortex
The last part of the brain to develop; a part of the forebrain; the outside cover of the brain where information is processed, associations are made, and learning takes place.

cerebrum
The two cerebral hemispheres which make up most of the brain and which are covered by the cerebral cortex.

cervix
The narrow, lower end of the uterus; the opening from the uterus to the vagina which dilates during labor to allow the baby to pass through.

chemical agents
Chemical environmental factors, such as drugs, that can affect the newborn.

chromosome
Threadlike particles in cells which carry genes.

circular reactions
Accidental or reflex actions made by infants which they notice and then do again.

classical conditioning
The process of associating a neutral stimulus (like a bell) with a meaningful stimulus (like food.) After this, the person responds in the same way to either stimulus.

classification
Understanding the relationship between objects. Putting objects (or ideas) into sets, or groups. (Separating apples and oranges into two groups.)

class inclusion
The ability to understand the relationship between a whole and its parts. (A dog is both a dog and an animal, and there are more animals than just dogs.)

cognitive style
Dispositions to perform mental activities in a particular way.

colic
Severe, recurring abdominal pain in young infants.

communicable diseases
Illnesses which can be passed from one person to the next.

comparative research
Research comparing human behaviors to animal behaviors.

conception
Fertilization of the ovum by the sperm.

concrete operations period
Piaget's stage (6 to 11 or 12 years) where children's logic is based on actual experiences of themselves or others. They can use symbols well enough to perform mental operations.

conditioned response
The response produced by classical conditioning. (Gagging at the smell of tuna when tuna is associated with spoiled food.)

conditioned stimulus
Any stimulus which is associated with an unconditioned, or naturally occurring, stimulus so that the same response is given to either stimulus.

congenital defects
Defects in physical functioning which are present at birth. They may be caused by genetic problems or by environmental assaults on the developing fetus.

conservation
Understanding that even though one property of an object changes, the other properties stay the same.

contraction
The shortening of the uterine muscle during labor which forces the fetus out of the uterus.

conventional moral thought
Kohlberg's second level; acts are judged on the basis of whether or not they meet the society's moral criteria.

coo
Very simple vowel sounds produced by the infant.

cooperative play
The stage of play where children take each other into account and begin to play with each other.

cortical control
Control exercised by the cerebral cortex over impulses.

crawling
Pulling and pushing the body across the floor with hands and feet, while keeping the trunk on the floor.

creeping
Moving the body with hands and feet, while keeping the trunk clear of the floor.

cross-cultural studies
Studies comparing human behaviors found in different cultures.

crying
A state involving a great deal of body movement, increased breathing patterns, flushed skin, and closed eyes when mouth is open.

data
Objective information.

decenter
The ability of children to consider more than one aspect of a situation at a time. (Older children can focus on both length and color when considering a long yellow pencil.)

deep sleep
A period of infant's sleep where little activity occurs.

defense mechanism
Unconscious mental processes used to cope with anxiety and stress.

delayed imitation
Imitation of things which the infant can no longer sense (see, hear, smell, touch, or taste).

delivery
The act of giving birth.

dendrites
Extensions from neurons that reach toward other nerves, making connections between them possible.

development
Systematic, or orderly, change over time.

developmental check lists
Observing and recording behaviors by checking off of a list of the behaviors as they occur.

dexterity
Skill and ease of movement, especially in the hands.

differentiated cries
Crying in different ways for different things (hunger, pain, etc.).

differentiation
The process of parts or skills separating and developing independently.

dilation
The expanding, or opening, of the cervix during labor.

distance sensors
Body parts that sense objects in the distance (eyes, ears, nose, and related body parts).

dominant inheritance
Inheriting a trait through a dominant gene.

doze
A state of infant's sleep with much limb and eye movement along with stretching; usually precedes waking.

dramatic play
Vivid, moving, fanciful play by children for amusement, recreation, or to recreate or mimick a real life or imaginary situation.

dynamic interaction world view
The belief that the environment and the person influence and are influenced by each other.

dyslexia
An inability to perceive written symbols correctly.

echolalia
Imitation of words without intending to use them to convey meaning.

ego
According to psychoanalytic theory, the rational part of the mind which acts as a referee between the id (what self wants) and the super-ego (the conscience).

egocentrism
The tendency to view everything from one's own perspective. (Related to centration in that the child cannot consider two perspectives simultaneously.) An inability to consider the views of others.

embryo
The term used for a human organism from the second week to the eighth week after conception.

epigenetic principle
New growth is founded on previous growth, but the new growth is something unique. These qualitative changes are the basis for thinking in terms of developmental stages.

ethological theory
A biological theory based on studying animals and humans in their natural environments. Ethological theory focuses on built-in, or innate, responses.

ethology
The study of organisms (including humans) in their natural environments.

event sampling
Recording observations of specific behaviors during a given time period.

expressive language functions
Production of speech that others are able to understand.

extended family
Relatives who have been defined as "family," but who are not part of the immediate family of parents and children.

extinction
The process of eliminating a conditioned response.

fallopian tube
The tube connecting the ovary to the uterus, through which the egg travels and where conception usually takes place.

fetal monitor
An instrument placed on the mother's abdomen or inserted through the vagina and attached to the infant's scalp in order to monitor the baby's vital signs during labor.

fetus
The term used for the unborn infant from the end of the eighth week until birth.

fine motor skills
Motor skills involving small muscles, like those in the hands and fingers.

5-to-7 shift
A brief period of rapid brain development that occurs sometimes between five and seven years of age.

forceps
An instrument which looks like tongs. Doctors may place forceps on the infant's head during delivery to change the baby's position or help it through the birth canal.

forebrain
The part of the brain that controls internal organs, body temperature, hormones, emotions, and learning.

formal operations period
Piaget's stage where adolescents can make systematic hypotheses, or predictions, about all possible solutions to a problem and then systematically test them out. They can think about possibilities rather than just facts. These abilities enable the child to think abstractly.

formulas
Milk-based nutrients which are fed to infants who are not breast fed.

free play
Children's play which is not directed or planned by adults. It is supervised, and environments may be prepared by adults in order to provide choices for the children.

functionally illiterate
The state of being unable to read and write well enough to function fully in society.

functions
The understanding that there is a basic relationship between two events (e.g., the sun and daytime), even though the nature of that relationship is not known. (Does daytime cause the sun to come up?)

game stage
G.H. Mead's stage where children are able to keep in mind all the perspectives in a group of people at the same time.

generalized other
Whole groups of people (family, peer groups, society) with whom a child can identify and take the group's perspective.

genes
Particles carried on the chromosome which transmit information to the cells about how to develop. These determine the biological traits and direct the growth and functioning of the body.

genetic
Hereditary, or passed from parent to child through genes.

genetic code
The particular arrangement of genes in any human.

genetic counseling
Counseling which gives information to parents regarding their chances of having a child with genetic problems.

glial cells
Cells in the brain that surround neurons and nourish them.

grasp reflex
When an object is laid in the newborn's palm, the fingers will automatically close around it, in a vice-like grip.

gross motor skills
Motor skills involving large muscles, like leg and arm muscles.

gynocological examination
A medical exam of the female reproductive system.

heredity
The passing down, through genes, of biological traits from parents.

hindbrain
The part of the brain deep in the center of the skull, at the top of the spinal cord, which controls reflexes and critical body functions.

hypothetico-deductive thought
The ability to think of all possible solutions and then test them systemtically to see which is correct.

id
In psychoanalytic theory, the irrational part of the mind which includes all drives and instincts; the raw energy of the nervous system.

identification
Taking the characteristics of someone or something else.

identities
The understanding that something is the same, even when its appearance changes. (Boys are still boys, even when they play dress up in mother's clothes.)

imaginary audience
A construction of early adolescents who believe that the world is watching their every move.

imitation stage
Mead's stage (around 2-3 years) where toddlers imitate, or copy actions and language of others with no real understanding of the meaning behind the actions.

immunity
Protection against disease.

immunizations
Long-term protection from certain diseases through innoculations (shots) or oral medicines.

implantation
The attachment of the blastocyst into the uterine lining. This signals the beginning of the embryonic stage.

impulsive thinkers
People who respond to problems very quickly, but who are often wrong.

information processing theory
A cognitive developmental theory which stresses how children process information (memory strategies, etc.).

inherited
Passed down from preceding generations of ancestors.

inhibit
To stop or minimize an action.

innate
Biologically built in.

integration
The process of differentiated, or separate, parts coming together to form a unique whole. The parts work independently but together to reach a goal.

internalize
Taking something (beliefs, values, etc.) as one's own.

intelligence quotient (IQ)
The ratio of mental age to chronological age; a score predicting how intelligent a child is, based on a standardized test.

irregular sleep
A period of infant's sleep with some body movement and irregular breathing.

irreversibility
The inability to understand how operations done to change something can be undone to change them back. (John can see the clay ball being rolled into a snake, but he cannot imagine the snake being rolled back into a ball unless he sees it happen.)

labor
The period during childbirth where the uterine muscles are contracting and the cervix is dilating.

language
The use of symbolic speech to represent ideas.

lanugo
The fine, soft white hair covering a fetus.

law of effect
This law states that a person will repeat actions that bring pleasant consequences and not repeat actions that are followed by unpleasant things.

libido
Psychoanalytic theory's terms for energy in the nervous system. It moves to different parts of the nervous system as development proceeds.

locomotion
The ability to move from place to place independently.

malnutrition
Lack of proper nourishment.

maturation
The process of reaching full functioning through a combination of physical growth and experiences.

maturational readiness
The principle that a child must be sufficiently mature before learning can take place. (Children cannot learn to sit until their muscles and nerves are mature enough.)

mechanistic world view
The belief that the environment causes people to behave as they do. People are viewed as passive receivers of change.

menstruation
The monthly process of the uterine lining being shed when no fertilized egg is implanted in it. This occurs monthly in the form of a bloody discharge through the vagina.

midbrain
The part of the brain above the hindbrain, which acts as a bridge between the brain and the rest of the body.

midwife
A trained and licensed woman who assists women in childbirth.

model
Anyone who shows a behavior others observe. To model means to show a behavior which will be imitated by others.

moro reflex
An involuntary response where the infant arches its back, sweeps arms in a hug, and draws up its legs as if to protect itself from a fall. This later develops into the startle reflex.

mutation
A change in genes which can be passed to one's offspring.

myelin
A fatty coating of the neurons which help the electrical impulses to flow quickly and smoothly.

myopia
Nearsightedness; can see close up but not far away.

nature/ nurture issue
A developmental issue concerned with how change is best explained—by nature (the person, heredity, internal influences) or by nurture (the environment, experiences, external influences).

negative reinforcement
Removal of an unpleasant stimulus.

negativism
The tendency for toddlers to say "no" to everything.

neonate
A newborn child from birth through the first few weeks.

neuron
Nerve cell.

neurotransmitter
A chemical found at the end of a neuron which transmits or stops electrical impulses between nerves.

normative (norms)
Average; the usual or normal. (Averages are in the middle of a range of normality.)

normative/ maturational theory
Arnold Gesell's biological theory based on the idea that physical maturation causes most development.

obese
Extremely overweight; at least 20 percent overweight.

objective observation
Recording actual behaviors which were seen or heard, without interpreting what the behaviors mean.

object permanence
An understanding that an object exists even though it is not directly sensed by the child.

operant conditioning
A learning process based on the consequences of behavior.

organic sensors
Internal body parts which sense changes in vital life signs.

organismic world view
The belief that people actively initiate change and their experiences with the environment.

organization
Piaget's term for the order of behavior and thought patterns. (Thought and behavior are organized, or ordered, into schema.)

orthogenetic principle
Development starts with a general, global quality. Specific parts and skills begin to differentiate, or separate. Then these integrate, or come together, to form a unique whole.

ova
Female reproductive cells. An ovum is one egg cell.

ovaries
The organs which carry the female's egg cells (ova) and release one of these cells (an ovum) each month along with certain hormones.

overgeneralize
The tendency to overextend language rules when they are first grasped; exceptions to the rules of grammar have not been learned.

ovulation
The monthly release of an ovum from one of the ovaries.

parallel play
When children are able to play beside each other, but not really with each other.

peers
A child's friends and acquaintances in the same group.

personal fable
A feeling of early adolescents that surely no one has ever felt the same feelings or thought the same thoughts before; a feeling of indestructibility; terminal uniqueness.

physical agents
Physical environmental factors, such as radiation, which can affect the newborn.

physiological jaundice
A condition caused by an neonate's immature liver which causes the skin and eyeballs to turn yellow. It is easily treated medically.

pincer skills
Skills involving a grasp between thumb and forefinger.

placenta
The organ lining the uterus during pregnancy to which the fetus is attached by the umbilical cord. It acts as a filter for the mother's blood and provides nourishment during pregnancy.

play stage
Mead's stage (about ages 3 to 6 years) where the child can take the role of another person. The child pretends to have another person's thoughts as well as behavior.

positive reinforcement
A consequence that is pleasant.

post-formal operations
The ability to systematically propose problems as well as solutions.

precocious
Advanced for one's age; usually in a specific area.

preconventional moral thought
Kohlberg's first level of moral development; an act is judged as right or wrong on the basis of whether or not someone is punished for it; intentions are not considered.

prenatal
Before birth.

preoperational period
Piaget's stage (ages 2 to 6 or 7) where symbolic thought is used and thought is pre-logical.

preoperational thought
A stage in which children can experiment with thoughts as well as objects. Mental operations are not yet possible.

prepared childbirth
Methods using physical and emotional preparation for labor and delivery to ease the discomfort of childbirth.

primary caregivers
The persons who are primarily responsible for a child's care and nurturance; usually parents.

primary sexual characteristics
Genital and reproductive organs which are present at birth.

principled moral thought
Kohlberg's third level of moral development; social rules are seen as subjective—there are higher order principles behind them. Rules are not absolute, they are relative.

processes
A systematic series of actions directed to some end; a series of changes.

projection
A defense mechanism of attributing one's own unacceptable feelings and behavior to someone else.

proprioception sensors
Body parts which sense balance, body position, and movement. (Muscles, tendons, and joints are involved.)

prosocial behavior
Actions that show positive regard for other people.

proximodistal development
Near-to-far development. The principle that development proceeds from the center of the body outward.

psychoanalytic theory
Theories based on Freud's ideas of psychosexual development.

psychosocial crisis
A basic conflict about one's social identity which must be resolved by the ego in order to move to the next stage of development. Erikson has charted eight crises throughout the life of human beings.

puberty
The time of sexual maturation, when the body is able to reproduce.

punishment
An unpleasant consequence of an event or behavior.

qualitative development
The development of new skills and parts which cannot be explained in terms of the old ones. These kinds of changes cannot be measured in the same way over time. (IQ is measured differently in infants and schoolchildren, so it may be measuring totally different things–like motor skills *vs.* school success.) Change occurs in stages.

quantitative development
Changes that can be measured the same way, regardless of age or situation. (Height and weight can always be measured in inches and pounds.) Development is seen as a continuous, steady adding of *more* of the same things.

quiet alert
An infant's state which involves little motor activity, but the eyes are open and focusing.

reaction formation
A defense mechanism that changes unacceptable emotions in opposite emotions.

receptive language functions
Comprehension of language; understanding what others mean when they speak.

recessive inheritance
Expression of genetic traits due to the pairing of two recessive genes.

reciprocal
Mutual give and take. Reciprocal interaction means that all factors of a situation affect and are affected by each other.

reciprocal interactions
The give-and-take actions between people. The actions of each person cause and are caused by the actions of other persons.

reflective thinkers
People who respond to problems slowly, but who are usually right.

reflexes
Involuntary actions, or responses, to specific stimuli.

regression
A process of behavior reverting to an earlier level when anxiety becomes too great. This can also be a defense mechanism.

reinforcement
A pleasant or unpleasant consequence of a behavior.

reliable
Trustworthy, or staying the same. Reliable observations are those which would be recorded the same no matter who is observing.

representational thought
Ability to use symbols to represent people, places, things, events, concepts, etc. (Also called symbolic thought.)

repression
A defense mechanism of forgetting thoughts or memories that cause too much anxiety.

respiratory
Related to breathing.

reversibility
The ability to mentally undo something which has been done. (When a ball of clay is mashed flat, the child can mentally change the shape back into a ball.)

rooting
A reflex caused by a touch on the neonate's cheek. The movements seem to reflect a searching for something to touch the lips.

running record
Observing and recording all behaviors as they happen during a given period of time.

schemes
Organized patterns of behavior or thought.

secondary caregivers
Persons who primary caregivers have asked to be temporarily responsible for their child's care.

secondary sexual characteristics
Physical developments which occur during puberty.

self-concept
The system of all the beliefs held about one's self.

self-esteem
The feelings one has toward one's self; usually based on the concept of self.

self-fulfilling prophesy
The tendency to act the way we think others expect us to act; this also involves our beliefs, or what we think they expect.

self-help skills
Skills involving the care of one's own needs, such as feeding, dressing, combing hair, etc.

sensitive periods
Times when the child's development is more sensitive to outside influences. (Usually in times of rapid change.)

sensorimotor intelligence
The coordination of infant motor and sensory systems.

sensorimotor period
Piaget's stage (birth to 2 years) when thought develops from sensory experiences and motor activity.

separation anxiety
The fear of being abandoned by parents. This fear starts about the middle of the first year.

sequence
The order in which change takes place.

seriation
The ability to arrange objects in a serial order.

significant others
People who are very important to children, usually parents and others who care for them.

social learning
The theory that learning occurs through imitation of, and identification with, other people.

social norms
Standards of behavior; behavior patterns expected by other members of a society.

social roles
Behaviors expected from people in social positions; usually implies a reciprocal role relationship (e.g., child-parent, teacher-student, boss-employee, etc.)

solitary play
The play of infants alone or with adults without regard for peers.

sonogram
A procedure using ultrasonic sound waves to produce a visual picture of an unborn fetus. An ultrasound exam.

sperm
The male reproductive cell.

spontaneous abortion
The loss of an embryo or fetus by miscarriage. In a therapeutic abortion, a doctor induces the mother's body to abort the embryo or fetus.

stage theory of cognitive development
Piaget's theory about the stages children go through as they come to understand their worlds and adapt to their environments.

standard childbirth
Methods using medication or anesthetics to ease the pain of labor and delivery.

startle reflex
An involuntary reaction to a sudden change in position or environmental stimuli; a refined form of the moro reflex.

state
An immediate physical condition which determines how a person will function at that particular time. The newborn has several distinct sleeping and waking states.

stimulus
A stimulation; something that causes a person to react.

stranger anxiety
Fear of strangers during infancy.

subjective observation
Recording an interpretation of behavior, rather than the actual behavior. This is based on what an observer thinks the behavior meant.

sucking reflex
A reflex caused by a touch on the neonate's lips. The lips involuntarily start a sucking motion.

superego
According to psychoanalytic theory, the part of the mind which includes all the things we have learned from society to be right and wrong; the conscience.

surface sensors
Body parts which sense physical contact (skin and tongue, along with other body parts involved in touch and taste).

symbolic communication
Mead's term to explain the sharing and exchange of meanings through symbols (such as words or gestures).

symbolic interaction
Mead's term for the kinds of interactions where people are sharing meanings. (When people use language, they are sharing symbols in order to interact with each other.) Through symbolic interaction, children come to understand themselves, others, and society.

symbolic play
Play which involves symbolic represenation—pretending one object is something else or that one person is another person.

symbolic thought
Thought based on using a mental image to stand for something else, such as using a person's name as a symbol for that person. (Also called representational thought.)

tactile stimulation
Physical touching.

telegraphic speech
Using a shortened sentence form to convey the same meaning as a longer form; one word and multiword sentences are types of telegraphic speech.

theory
A way of organizing and looking at all the information about something so that the information makes sense. A theory is a way to interpret objective observations.

time sampling
Observing and recording the occurrence of behaviors at specific time intervals.

tonic neck reflex
The infant automatically turns its head in the opposite direction from which it has extended its arm and leg.

transductive reasoning
Thinking that one thing causes another just because they seem to be related. (A child may think, "If I don't take my nap, afternoon won't come.") Also, taking two unrelated facts and thinking they are related. (A child may think that the sun sets because the birds sing.)

transition
The last part of labor when the infant's head passes through the cervix and into the birth canal.

translocation
The process where genes move to different locations on the chromosome.

trimester
A consecutive three-month period of a pregnancy.

trust
An infant's confidence that the reactions of caregivers will usually be consistent, and therefore, predictable. This is also necessary when interacting with objects.

umbilical cord
The cord connecting the placenta with the fetus. The cord contains arteries and a vein that nourish the fetus and removes its wastes.

unconditioned response
A naturally occurring or reflex behavior.

unconditioned stimulus
A naturally occurring stimulus that carries natural meaning.

undifferentiated cries
Crying that carries no particular information for caregivers (the same tone and pitch is used for hunger, pain, etc.).

unlearned reactions
Built-in, innate, responses.

uterus
The female muscular organ which holds the developing fetus during pregnancy; the womb.

valid
Correct, true, or at least supported by evidence. (A valid interpretation is a correct one. A valid test is one which really measures what it is supposed to measure.)

venereal disease
Sexually transmitted diseases.

vernix
A thick, greasy white material covering the fetus's skin.

waking activity
A infant's state which involves much physical activity, open eyes, and irregular breathing.

world view
A general idea of what humankind is like. This view will determine how one interprets behavior that is observed.

zygote
The organism formed by the union of an ovum and a sperm.

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